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**PLYMOUTH TUBE
MNA GROUNDWATER MONITORING REPORT
4TH QUARTER 2018
FORMER PLYMOUTH TUBE COMPANY FACILITY
CHANDLER, ARIZONA**

by
Haley & Aldrich, Inc.
Phoenix, Arizona

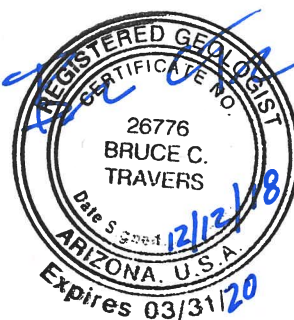
for
Plymouth Tube Company
Warrenville, Illinois



File No. 128159-003
December 2018

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1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich), on behalf of the Plymouth Tube Company (Plymouth Tube), has prepared this Monitored Natural Attenuation (MNA) Groundwater Monitoring Report – 4th Quarter 2018 (MNA Groundwater Monitoring Report) to document the field activities and findings for the quarterly MNA groundwater monitoring and sampling at the Former Plymouth Tube Company Facility located at 6573 West Willis Road in Chandler, Arizona (Site). Figure 1 presents the Site location map.

The 4th Quarter 2018 MNA groundwater monitoring and sampling event was conducted between 13 and 15 November 2018. These activities were conducted in accordance with previous groundwater monitoring and sampling activities as presented in the various groundwater monitoring work plans developed for the Site, and as presented in the U.S. Environmental Protection Agency (USEPA) approved “Focused ISCO Injection and Monitoring Report” (In-situ Chemical Oxidation [ISCO] Report) dated 22 May 2018 (Haley & Aldrich, 2018). In a letter dated 23 July 2018, the USEPA approved the Site to move to the MNA monitoring program to further evaluate the attenuation that is occurring at the Site (USEPA, 2018). MNA monitoring began in August 2018 with a quarterly sampling program for 1 year. Starting in August 2019 the MNA plan shifts to semi-annual monitoring for the following 4 years. This report covers the second quarterly monitoring event conducted under the approved MNA program.

2. Scope of Activities

The Plymouth Tube groundwater monitor wells PT-1S, PT-1D, LB-7R, PT-2S, PT-2D, PT-3, PT-3D, PT-4, PT-4D, and PT-5 were drilled and installed between 2005 and 2012 (Geomatrix, 2006; AMEC Geomatrix, 2008; and Geosyntec, 2012a and b). The year-long quarterly MNA groundwater monitoring program for these monitor wells began in August 2018 (USEPA, 2018). The quarterly MNA groundwater monitoring program includes quarterly water level measurements and groundwater sampling and analysis at the 10 above-mentioned monitor wells. Sampling of an individual monitor well may be discontinued if the detected volatile organic compound (VOC) concentrations are below their respective maximum contaminant level (MCL) for two consecutive sampling events and the USEPA and Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) agree with the request to stop sampling at that monitor well.

Dedicated down-hole pumps for groundwater monitor wells LB-7R and PT-2S, that were operating between October 2011 and May 2015, were removed on 19 May 2015 as part of the Reduced Pumping and Temporary Shutdown of the Limited Groundwater Pump and Treat System (LGWP&T) Investigation (Allwyn Environmental, 2015; and NV5, 2015).

In addition to the 10 monitor wells noted above, 4 GRIC groundwater monitor wells (LB-1, LB-13, LB-17, and PT-6D) were included in this quarter's water level measurement and groundwater sampling event. Access to these monitor wells for monitoring and sampling was provided by GRIC DEQ. Mr. Daniel Pike of ATC Group Services (consultant to GRIC DEQ) was present as the GRIC DEQ representative at the GRIC monitor wells during monitoring and sampling and provided access to each of these monitor wells. The groundwater monitor wells LB-1, LB-13, and LB-17 were drilled and installed by the GRIC DEQ Water Quality Program in August 2002, August 2009, and March 2011, respectively (ATC Associates, 2012). GRIC monitor well PT-6D was drilled and installed in August 2014 by Cardno (Cardno, 2014a). Figure 2 presents the groundwater monitor well network for Plymouth Tube and selected GRIC monitor wells (LB-1, LB-13, LB-17, and PT-6D).

2.1 GROUNDWATER ELEVATION MEASUREMENTS

Depth to groundwater was measured in Plymouth Tube groundwater monitor wells PT-1S, PT-1D, PT-2S, PT-2D, PT-3, PT-3D, PT-4, PT-4D, and PT-5 and GRIC monitor wells LB-1, LB-13, LB-17, and PT-6D between 13 and 15 November using a calibrated and decontaminated electric water level sounder. Monitor well LB-7R was included in this monitoring event even though the monitor well was used as one of three ISCO injection points that was conducted as part of the USEPA approved Final Corrective Measures for groundwater (Haley & Aldrich, 2017). The depth to groundwater was measured from the top of the well casing (north side) to the nearest 0.01 foot.

Table I presents the Plymouth Tube monitor well water level measurements collected between 23 September 2008 and 14 November 2018. Table II presents the select GRIC monitor well water level measurements between 22 May 2013 and 15 November 2018. Figure 2 presents the groundwater elevation contours utilizing the water level measurements from the Plymouth Tube and GRIC monitor wells. Figure 3 presents the Plymouth Tube monitor well water level elevation hydrograph for the period 23 September 2008 through 15 November 2018.

2.2 GROUNDWATER SAMPLING

Haley & Aldrich collected groundwater samples from Plymouth Tube monitor wells PT-1S, PT-1D, PT-2S, PT-2D, PT-3, PT-3D, PT-4, PT-4D, and PT-5 and GRIC monitor wells LB-1, LB-13, LB-17, and PT-6D between 13 and 15 November 2018. Monitor well LB-7R was included in this groundwater monitoring event to monitor the effectiveness of the ISCO injection that was conducted as part of the USEPA approved Final Corrective Measures for groundwater (Haley & Aldrich, 2017). Monitor well LB-7R was previously sampled in December 2017 and in March 2018 as part of the Post-ISCO sampling plan (Haley & Aldrich, 2017). Each groundwater sample was analyzed for VOCs and 1,4-Dioxane.

A low-flow sampling method was implemented in order to collect groundwater samples from the Plymouth Tube and select GRIC monitor wells (Geomatrix, 2005). The low-flow sampling method involved the use of a QED Sample Pro® micropurge bladder pump (pump), QED MP-10 control box, and compressed gas (carbon dioxide [CO₂]) cylinders. Groundwater samples were collected at approximately the mid-point of the saturated screen interval. Prior to submerging the decontaminated pump at each monitor well, the water level was measured using an electric water level sounder to verify the depth to water.

The pump was slowly lowered into the monitor well to minimize disturbance to the water column until the intake port reached the desired sample collection depth. Groundwater was purged from each monitor well at an approximate rate of 200 milliliters per minute (mL/min). Following purging, a groundwater sample was collected at an approximate pumping rate of 100 mL/min.

For the monitor wells sampled, a water quality data instrument (YSI 556 MPS) with a flow-through cell was used to continuously measure the field water quality parameters: pH, temperature, dissolved oxygen (DO), reduction/oxidation potential (Redox), and specific electrical conductance every 2 to 5 minutes. Pre-sample purging continued until water quality parameters stabilized for three successive readings collected at 2- to 5-minute intervals, which is the approximate time required to fill the flow-through cell. Pre-sample purging continued until water quality standards stabilized with approximately 5 percent of the previous three readings, and positive/negative (+/-) 0.1 standard units for pH, +/- 4 degrees Fahrenheit for temperature, +/- 3 percent of last reading for specific electrical conductance, +/- 10 millivolt (mV) for Redox, +/- 10 percent for DO, and until the water appeared clear and free of sediment. These data were recorded on a Well Sampling Record for each monitor well, and copies are included in Appendix A.

Upon stabilization of the water quality parameters, the flow-through cell was disconnected and the groundwater sample was collected from the outlet tubing. New polyethylene tubing was used in each monitor well to transmit the water from the pump to the surface for collection. Groundwater samples from the Plymouth Tube and GRIC groundwater monitor wells were collected for analysis into the following laboratory-certified sample containers:

- VOCs for USEPA Test Method 8260B – three 40-milliliter (mL) volatile organic analysis (VOA) vials preserved with hydrochloric acid; and
- 1,4-Dioxane for USEPA Test Method 8260B SIM – three 40-mL VOA vials preserved with hydrochloric acid.

Each set of VOA vials was labeled and enclosed in bubble wrap and placed in a cooler with wet ice for transport to SGS Accutest Laboratories, an Arizona Department of Health Services certified laboratory (AZ0762), under standard chain-of-custody protocol.

The depth to water was again measured at the conclusion of each monitor well sampling. These measurements were performed to document that minimal water level drawdown was maintained throughout the sampling effort.

Water purged during the groundwater sampling event was stored in a 250-gallon polyethylene tote within the Plymouth Tube treatment compound located on the Kaiser Aluminum property.

2.3 DECONTAMINATION OF SAMPLING EQUIPMENT

Before any non-dedicated equipment, including the electric water level sounder, the YSI 556 MPS water quality instrument, and the QED Sample Pro bladder pump was used at each monitor well, the equipment was decontaminated using Alconox and distilled water followed by two distilled water rinses.

2.4 FIELD QUALITY CONTROL SAMPLES

The following are the field quality control (QC) samples that were collected during this groundwater sampling event.

2.4.1 Trip Blank Samples

Trip blank samples were prepared to evaluate whether the shipping and handling procedures introduced contaminants into the sample stream, and/or if VOC cross contamination occurred among the collected samples. Trip blanks were prepared and sealed by SGS Accutest Laboratories, and not opened during the sampling activities. One trip blank was provided by SGS Accutest Laboratories for each sample cooler (one per day of sampling). The three trip blank samples were analyzed for VOCs using USEPA Test Method 8260B. VOCs were not detected above the laboratory method detection limit (MDL) in the three trip blank samples collected on 13 through 15 November 2018. Analytical results for the trip blank samples are included in Appendix B, and discussed in Appendix C.

2.4.2 Equipment Rinsate Blank Samples

Equipment rinsate blank (ERB) samples consisted of deionized water collected after being passed through and over the surface of the decontaminated QED Sample Pro bladder pump. A total of three ERB samples were collected; one sample per day of groundwater sampling. The three ERB samples collected were analyzed for VOCs using USEPA Test Method 8260B. No VOCs were detected above the laboratory MDL in the three ERB samples collected on 13 through 15 November 2018. Analytical results for the ERB samples are included in Appendix B, and discussed in Appendix C.

2.4.3 Duplicate Field Samples

One duplicate field groundwater sample was collected from monitor well PT-1S on 14 November 2018. The duplicate sample was analyzed for VOCs and 1,4-Dioxane using USEPA Test Methods 8260B and 8260B SIM, respectively. Analytical results for the duplicate field sample are included in Appendix B, and discussed in Appendix C.

3. Analytical Results

Constituents of concern (COCs) for the Plymouth Tube Site include trichloroethylene (TCE), 1,1-dichloroethene (1,1-DCE), tetrachloroethene (PCE), and 1,4-Dioxane. Table III presents the summary of detected COCs in groundwater samples collected from the Plymouth Tube monitor wells, and Table IV presents the summary of detected COCs in groundwater samples collected from select GRIC monitor wells during the 4th Quarter 2018 groundwater sampling event. Figure 2 represents the groundwater monitor well locations, TCE groundwater quality results and contours, and water level elevations and contours of the Plymouth Tube and select GRIC monitor wells. Copies of the final laboratory reports for the 4th Quarter 2018 sampling event are included in Appendix B.

3.1 PLYMOUTH TUBE AND SELECT GRIC GROUNDWATER MONITOR WELLS

The following presents the COC concentrations detected during the 4th Quarter 2018 groundwater monitoring event.

3.1.1 Monitor Well PT-1S

- TCE and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 1.3 and 1.2 micrograms per liter (µg/L), respectively. The detected concentration of TCE was below its USEPA MCL of 5 µg/L, respectively. There is currently no MCL for 1,4-Dioxane.
- Figure 4 presents the historical water quality hydrograph for monitor well PT-1S.
- TCE concentration significantly declined since the TCE concentration rise began around November 2011. Future sampling events will determine if the water quality results have returned to the levels detected during the period of November 2011 through August 2013 (<8 µg/L).

3.1.2 Monitor Well PT-1D

- No COCs were detected above the laboratory MDLs. The concentration of TCE detected above the MDL in the 3rd Quarter 2018 was not confirmed.
- Figure 5 presents the historical water quality hydrograph for monitor well PT-1D.
- Other than the 3rd Quarter 2018 sampling event, COCs have been below their respective MCLs since September 2008.

3.1.3 Monitor Well LB-7R

- Monitor well LB-7R was not included in the 1st Quarter 2018 Groundwater Monitoring event because it was used as an injection well for the ISCO application as outlined in the Final Corrective Measures Implementation, Soil Vapor Extraction Closure and Focused ISCO, and MNA Work Plans (Haley & Aldrich, 2017). Monitor well LB-7R was sampled in December 2017 and in March 2018 as part of the Post-ISCO sampling plan (Haley & Aldrich, 2017). Detected TCE concentrations for these two Post-ISCO sampling events were 0.45 (J) and 7.0 µg/L, respectively. The “(J)” flagged results indicate that the value is an estimated concentration somewhere between the MDL and the laboratory reporting limit (LRL). Monitor well LB-7R was sampled during the 2nd Quarter 2018 Groundwater Monitoring event when TCE was detected at 22.7 µg/L.

- Monitor well LB-7R was included in this groundwater monitoring event to monitor the effectiveness of the ISCO injection that was conducted as part of the USEPA approved Final Corrective Measures for groundwater (Haley & Aldrich, 2017).
- TCE and 1,4-Dioxane were detected during the 4th Quarter 2018 Groundwater Monitoring event above the laboratory MDLs at concentrations of 86.9 and 10.1 µg/L, respectively. The detected concentrations of TCE was above its MCLs of 5 µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 6 presents the historical water quality hydrograph for monitor well LB-7R.
- Recent data indicates a small rebound in TCE concentrations since the ISCO application. TCE concentration of 7.0, 22.7, 43.1, and 86.9 µg/L detected during the recent groundwater monitoring events still remains significantly lower than the historic Pre-ISCO TCE concentration of +5,000 µg/L. The field groundwater parameter monitoring also indicated that the oxidant may still be active as the groundwater sampling pH was 10.2 during the 4th Quarter 2018 Groundwater Monitoring event (Appendix A).

3.1.4 Monitor Well PT-2S

- TCE, 1,1-DCE, PCE, and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 794, 163, 0.40(J), and 47.0 µg/L, respectively. Detected concentrations of TCE and 1,1-DCE were above their MCLs of 5 and 7 µg/L, respectively. The detected concentration of PCE was below its MCL of 5 µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 7 presents the historical water quality hydrograph for monitor well PT-2S.
- TCE concentrations remain substantially below the historic maximum concentration of 1,500 µg/L detected in January 2010. Sampling of this monitor well conducted as part of the ISCO corrective measure for groundwater on 15 March 2018 detected TCE at a lower concentration (645 µg/L) than the 1st Quarter 2018 Groundwater Monitoring event (705 µg/L) (Figure 7). Sampling results during the 3rd Quarter 2018 sampling event (670 µg/L) indicate that the detected TCE concentrations are slightly above the Pre-ISCO range.

3.1.5 Monitor Well PT-2D

- TCE was detected above the laboratory MDL at concentration of 2.2 µg/L. The detected concentration of TCE was below its MCL of 5 µg/L.
- Figure 8 presents the historical water quality hydrograph for monitor well PT-2D.
- When detected, TCE concentrations have been below the MCL of 5 µg/L since the 4th Quarter 2011 sampling event.
- Detected COC concentrations have not exceeded their respective MCLs since the November 2011 sampling event. Monitor well PT-2D qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.6 Monitor Well PT-3

- TCE, 1,1-DCE, and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 193, 32.3, and 9.5 µg/L, respectively. Detected concentrations of TCE and 1,1-DCE were above their MCLs of 5 and 7 µg/L, respectively. There is currently no MCL for 1,4-Dioxane.
- Figure 9 presents the historical water quality hydrograph for monitor well PT-3.

- The detected TCE concentrations remain below the historic maximum concentration of 230 µg/L detected in November 2011.

3.1.7 Monitor Well PT-3D

- 1,4-Dioxane was detected above the laboratory MDLs at concentrations of 0.37 (J) µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 10 presents the historical water quality hydrograph for monitor well PT-3D.
- When detected, TCE has never been above the MCL of 5 µg/L.
- Detected COC concentrations have not exceeded their respective MCLs since groundwater sampling began in April 2012. Monitor well PT-3D qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.8 Monitor Well PT-4

- TCE, 1,1-DCE, and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 47.7, 5.6, and 2.3 µg/L, respectively. The detected concentration of TCE was above its MCL of 5 µg/L, while the detected concentration of 1,1-DCE does not exceed its MCL of 7 µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 11 presents the historical water quality hydrograph for monitor well PT-4.

3.1.9 Monitor Well PT-4D

- No COCs were detected above the laboratory MDLs.
- Figure 12 presents the historical water quality hydrograph for monitor well PT-4D.
- TCE has never been detected above the MCL of 5 µg/L.
- Detected COC concentrations have not exceeded their respective MCLs since groundwater sampling began in April 2012. Monitor well PT-4D qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.10 Monitor Well PT-5

- TCE and 1,4-Dioxane were detected above their laboratory MDLs at concentrations of 1.5 and 0.43 (J) µg/L, respectively. The detected concentration of TCE was below the MCL of 5 µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 13 presents the historical water quality hydrograph for monitor well PT-5.
- TCE concentrations have been below the MCL of 5 µg/L since the 2nd Quarter 2013 sampling event.
- Detected COC concentrations have not exceeded their respective MCLs since the May 2013 sampling event. Monitor well PT-5 qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.11 Monitor Well LB-1

- TCE and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 21.1 and 1.3 µg/L, respectively. The detected concentration of TCE was above its MCL of 5 µg/L. There is currently no MCL for 1,4-Dioxane.
- Figure 14 presents the historical water quality hydrograph for monitor well LB-1, which includes historical GRIC data (Cardno, 2014a and b).

3.1.12 Monitor Well LB-13

- TCE, 1,1-DCE, and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 3.3, 0.54 (J) and 0.58 (J) µg/L, respectively. The detected concentrations of TCE and 1,1-DCE did not exceed their MCLs of 5 and 7 µg/L, respectively. There is currently no MCL for 1,4-Dioxane.
- Figure 15 presents the historical water quality hydrograph for monitor well LB-13, which includes historical GRIC data (Cardno, 2014a and b).
- TCE concentrations have shown a general continual decline since the 4th Quarter of 2013. TCE concentrations have not exceeded the MCL of 5 µg/L in the last nine quarterly sampling events.
- Detected COC concentrations have not exceeded their respective MCLs since the November 2013 sampling event. Monitor well LB-13 qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.13 Monitor Well LB-17

- TCE, 1,1-DCE, PCE and 1,4-Dioxane were detected above the laboratory MDLs at concentrations of 2.1, 0.73 (J), 0.50 (J), and 0.42 (J) µg/L, respectively. The detected concentrations of TCE, 1,1-DCE, and PCE were below their respective MCLs of 5, 7, and 5 µg/L, respectively. There is currently no MCL for 1,4-Dioxane.
- Figure 16 presents the historical water quality hydrograph for monitor well LB-17, which includes historical GRIC data (Cardno, 2014a and b).
- TCE concentrations have been below the MCL of 5 µg/L since the 4th Quarter 2015 sampling event.
- Detected COC concentrations have not exceeded their respective MCLs since the 18 November 2015 sampling event. Monitor well LB-17 qualifies for groundwater sampling and monitoring discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.1.14 Monitor Well PT-6D

- TCE was detected above the laboratory MDL at concentrations of 1.3 µg/L. The detected concentrations of TCE was below its MCL of 5 µg/L.
- Figure 17 presents the historical water quality hydrograph for monitor well PT-6D.
- TCE was only detected above its MCL of 5 µg/L during the first groundwater sampling event at this monitor well conducted on 11 November 2014. Since then, TCE concentrations have been below the MCL of 5 µg/L since the 1st Quarter 2015 sampling event.
- Detected COC concentrations have not exceeded their respective MCLs since the 25 February 2015 sampling event. Monitor well PT-6D qualifies for groundwater sampling and monitoring

discontinuation based on two (or more) consecutive quarters of detected COC concentrations being below their respective MCLs.

3.2 GROUNDWATER ELEVATIONS

Figure 2 presents groundwater monitor well locations and groundwater elevations in the shallow monitor wells in feet above mean sea level. Figure 2 also presents the contoured TCE concentrations for the data collected during the 4th Quarter 2018 sampling event. Figure 3 presents the historical groundwater elevations for the Plymouth Tube monitor wells (note: groundwater level elevations for LB-7R and PT-2S have been non-pumping since 15 May 2015). GRIC did not collect water level measurements from the surrounding GRIC monitoring wells during this sampling event. The direction of groundwater flow during the 4th Quarter 2018 is towards the west-southwest with a groundwater gradient of approximately 0.0009 feet/foot, similar to previous monitoring events.

The paired monitor wells PT-2S/PT-2D, PT-3/PT-3D, and PT4/PT4D show a slight upward water level elevation gradient. The paired monitor wells PT-1S/PT-1D, and LB-13/PT-6D show a slight downward water level elevation gradient.

4. Data Verification

Data verification of the 4th Quarter 2018 water quality data was completed. Appendix C presents the data quality review. The analytical data packages were received from SGS Accutest Laboratories and reviewed for basic analytical quality assurance/quality control adherence based on the *“EPA Contract Laboratory Program National Functional Guidelines (NFG) for Superfund Organic Methods Data Review, June 2008 (USEPA-540-R-08-01), Quality Assurance Project Plan (QAPP), Former Plymouth Tube, prepared for the United States Environmental Protection Agency, February 2013”* (Geomatrix, 2005), as well as by the pertinent methods referenced by the data package and professional judgment. Data packages were reviewed for chain-of-custody discrepancies; adherence to sample holding times; evaluation of matrix spike/matrix spike duplicates and laboratory control samples/laboratory control sample duplicates; and assessment of equipment, field, trip, and method blanks.

Following verification of the data presented in the analytical data packages, the data as qualified are considered usable and acceptable for meeting project objectives.

5. ISCO Data Summary Update

Below is an ISCO data summary for the 4th Quarter 2018 sampling event results of selected monitor wells. The ISCO injection event was conducted in September 2017, approximately 14 months ago.

- The area of traditional greatest COC concentrations, monitor well LB-7R, still has a basic pH of 10.2 and oxidative Redox potential with aerobic groundwater.
 - The groundwater concentration for TCE and 1,4-Dioxane have not rebounded significantly but have continued to increase slightly during the 4th Quarter 2018 sampling event. TCE and 1,4-Dioxane concentrations have been reduced 98.4 percent and 98.7 percent, respectively, when compared to the 3rd Quarter 2017 sampling event results (Pre-ISCO results). Concentrations have increased slightly to their current concentrations of 86.9 µg/L TCE and 10.1 µg/L 1,4-Dioxane. Rebound has been minimal when compared to the Pre-ISCO concentrations, however, with TCE and 1,4-Dioxane concentrations of 5,280 µg/L and 760 µg/L, respectively.
 - Only TCE and 1,4-Dioxane are present in detectable concentrations in the groundwater samples collected from monitor well LB-7R, indicating that additional compounds such as 1,1-DCE have been oxidized in the vicinity of LB-7R.
 - The subsurface remains basic which indicates that some of the persulfate may still be active in the subsurface. It was seen during the bench scale evaluation that once the oxidant was depleted, the pH returned to baseline conditions (pH 7 range). As this has not yet occurred, it may indicate that there is still active oxidant in the subsurface that is capable of continuing to oxidize residual COC concentrations.
- Closest downgradient monitor wells PT-2S/PT-2D and PT-3/PT-3D:
 - Monitor wells PT-2S and PT-2D: COC concentrations are fairly stable compared to Pre-ISCO concentrations, however, the concentration of TCE in monitor well PT-2S has fluctuated following the ISCO event. The water quality data indicated some initial increases in the concentration of TCE and 1,4-Dioxane in groundwater samples collected from monitor well PT-2S following the ISCO event. The concentration of TCE increased to 794 µg/L during the 4th Quarter 2018 sampling event and 1,4-Dioxane increased slightly to 47 µg/L. The concentrations in monitor well PT-2D have remained stable following the ISCO event and remain low at 2.2 µg/L for TCE and below the laboratory detection limit for 1,4-Dioxane. Field parameters indicate near neutral pHs with oxidative and aerobic conditions.
 - Monitor wells PT-3 and PT-3D: COC concentrations are primarily stable compared to Pre-ISCO concentrations. The water quality data indicated some initial increases in the concentration of TCE in groundwater samples collected from monitor well PT-3 and the concentration of TCE remains slightly elevated at 193 µg/L during the 4th Quarter 2018 sampling event when compared to the Pre-ISCO result of 166 µg/L. However, the concentration remains stable in groundwater samples collected from this monitor well. Concentrations in monitor well PT-3D remain below the laboratory detection limits. Field parameters indicate near neutral pHs with oxidative and aerobic conditions.
 - There was an unusual detection of TCE in monitor well PT-1D which had a concentration of 7.1 µg/L during the 3rd Quarter 2018, however, all COCs were below the laboratory detection limit during the 4th Quarter 2018 (as were all historic TCE sampling results going back to September 2008), indicating that the 3rd Quarter results were anomalous.

All indications from the groundwater and field parameter sampling results, including downgradient and upgradient wells, indicate that the TCE plume did not expand following the ISCO injection remedial event. There has been some fluctuation in TCE concentrations at some of the monitor wells and recent but minimal increases in TCE at monitor well LB-7R; however, these concentrations do not indicate significant rebound.

6. Request to Discontinue Groundwater Monitoring at Selected Monitor Wells

The USEPA 23 July 2018 Groundwater MNA Approval letter states that “Sampling of an individual monitor well may be discontinued if VOC concentrations are below their respective MCL for two consecutive sampling events, and the USEPA and GRIC DEQ agree with the request to stop sampling at that monitor well...” (USEPA, 2018). Plymouth Tube originally requested that the following monitor wells be removed from the MNA monitoring program in the 3rd Quarter 2018 MNA Groundwater Monitoring Report. In an email dated 13 November 2018, the USEPA denied this request without providing any further explanation but also stated that the USEPA will reopen the request “at a later date.” The water quality results from the 4th Quarter 2018 MNA Groundwater Monitoring event for these three wells continue to report TCE, 1,1-DCE, and PCE concentrations below their respective MCLs. Plymouth Tube again requests that the following monitor wells be removed from the MNA monitoring program.

- Monitor Well LB-17: This monitor well was initially sampled by Plymouth Tube on 22 May 2013. Detected TCE concentrations have consistently not exceeded their respective MCL of 5 µg/L since the 18 November 2015 monitoring event. Thirteen groundwater monitoring events (including this current monitoring event) have been conducted since 18 November 2015. 1,1-DCE and PCE have never been detected above their respective MCLs of 7 and 5 µg/L (Table IV and Figure 16).
- Monitor Well LB-13: This monitor well was initially sampled by Plymouth Tube on 22 May 2013. Detected TCE concentrations have consistently not exceeded their respective MCL of 5 µg/L since the 17 November 2016 monitoring event. Nine groundwater monitoring events (including this current monitoring event) have been conducted since 17 November 2016. 1,1-DCE and PCE have never been detected above their respective MCLs of 7 and 5 µg/L (Table IV and Figure 15).
- Monitor Well PT-6D: This monitor well was initially sampled by Plymouth Tube on 11 November 2014. Detected TCE concentrations have consistently not exceeded their respective MCL of 5 µg/L since the 25 February 2015 monitoring event. Sixteen groundwater monitoring events (including this current monitoring event) have been conducted since 11 November 2014. 1,1-DCE and PCE have never been detected above their respective MCLs of 7 and 5 µg/L (Table IV and Figure 17).

Plymouth Tube also request that based on the historical data that the following monitor wells also be removed from the MNA monitoring program. Each of these monitor wells meet the USEPA monitoring discontinuation requirements of two consecutive sampling events with VOC concentrations below their respective MCLs. Plymouth Tube requests approval from USEPA and GRIC to ending monitoring based on the historical water quality analytical results presented below which meet the USEPA monitoring discontinuation requirement.

- Monitor Well PT-3D: This monitor well was initially sampled by Plymouth Tube on 26 April 2012. Detected COC concentrations have never exceeded their respective MCLs in any sampling event (Table III and Figure 10).
- Monitor Well PT-4D: This monitor well was initially sampled by Plymouth Tube on 26 April 2012. Detected COC concentrations have never exceeded their respective MCLs in any sampling event (Table III and Figure 12).

- Monitor Well PT-5: This monitor well was initially sampled by Plymouth Tube on 15 November 2011. Detected TCE concentrations have consistently not exceeded their respective MCL of 5 µg/L since the 23 May 2013 monitoring event. Twenty-four quarterly groundwater monitoring events (including this current monitoring event) have been conducted since the 23 May 2013 sampling event. TCE, 1,1-DCE, and PCE have never been detected above their respective MCLs of 5, 7, and 5 µg/L during those sampling events (Table III and Figure 13).

7. References

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8. Geosyntec, 2012a. Summary Report-Additional Site Characterization HydroPunch® Sampling and Groundwater Monitor Well Installation and Sampling for the Former Plymouth Tube Company, Chandler, Arizona. 23 January.
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10. Haley & Aldrich, 2017. Final – Corrective Measures Implementation, Soil Vapor Monitor Extraction System Closure and Focused ISCO and MNA Work Plans, Former Plymouth Tube Company Facility, 6573 West Willis Road, Chandler, Arizona. 26 April.
11. Haley & Aldrich, 2018. Focused ISCO Injection and Monitoring Report, Former Plymouth Tube Company Facility, 6573 West Willis Road, Chandler, Arizona. 22 May.
12. NV5, 2015. Summary Report – Groundwater Sampling Results During the Reduced Pumping and Temporary Shutdown of the Limited Groundwater Pump & Treat System, Former Plymouth Tube Company Facility, 6573 West Willis Road, Chandler, Arizona. 1 October.
13. United State Environmental Protection Agency, 2018. Letter to Bruce Travers, P.G., Haley & Aldrich from Madison Sanders-Curry, USEPA Re: Groundwater Monitoring and Natural Attenuation Approval for the Plymouth Tube Company Facility, EPA ID # AZD020691507. 23 July.

TABLES

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-1S	9/24/08	1157.422	74.86	1082.56
	10/31/08		73.42	1084.00
	12/17/08		72.55	1084.87
	1/21/09		71.01	1086.41
	2/19/09		70.73	1086.69
	3/25/09		71.70	1085.72
	4/8/09		70.75	1086.67
	4/29/09		70.93	1086.49
	6/15/09		72.98	1084.44
	7/21/09		73.38	1084.04
	9/1/09		73.65	1083.77
	10/20/09		73.07	1084.35
	3/8/10		71.30	1086.12
	4/19/10		71.13	1086.29
	7/29/10		71.35	1086.07
	1/11/11		68.78	1088.64
	3/18/11		68.60	1088.82
	7/26/11		68.11	1089.31
	11/14/11		67.13	1090.29
	11/15/11		67.23	1090.19
	2/23/12		65.30	1092.12
	4/26/12		64.63	1092.79
	5/30/12		64.65	1092.77
	8/29/12		64.18	1093.24
	12/5/12		63.87	1093.55
	2/18/13		63.52	1093.90
	5/22/13		63.73	1093.69
	8/19/13		64.63	1092.79
	11/20/13		64.75	1092.67
	2/17/14		64.52	1092.90
	5/27/14		65.29	1092.13
	8/17/14		66.34	1091.08
	11/13/14		65.20	1092.22
	2/23/15		64.89	1092.53
	5/28/15		65.53	1091.89
	8/28/15		66.20	1091.22
	11/19/15		65.90	1091.52
	2/24/16		65.81	1091.61
	5/25/16		65.95	1091.47
	8/24/16		66.31	1091.11
	11/16/16		66.00	1091.42
	2/22/17		66.01	1091.41
	5/24/17		66.26	1091.16
	8/30/17		67.20	1090.22
	11/15/17		67.39	1090.03
	2/28/18		67.05	1090.37
	5/30/18		67.17	1090.25
	8/22/18		67.94	1089.48
	11/14/18		67.32	1090.10

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-1D	9/24/08	1157.537	75.02	1082.52
	10/31/08		73.56	1083.98
	12/17/08		72.70	1084.84
	1/21/09		71.14	1086.40
	2/19/09		70.85	1086.69
	3/25/09		71.85	1085.69
	4/7/09		70.89	1086.65
	4/29/09		71.05	1086.49
	6/15/09		73.16	1084.38
	7/21/09		73.50	1084.04
	8/31/09		73.70	1083.84
	10/20/09		73.48	1084.06
	3/8/10		71.42	1086.12
	4/19/10		71.24	1086.30
	7/29/10		71.50	1086.04
	1/11/11		68.91	1088.63
	3/18/11		68.70	1088.84
	7/26/11		68.23	1089.31
	11/14/11		67.25	1090.29
	11/15/11		67.35	1090.19
	2/23/12		66.43	1091.11
	4/26/12		64.78	1092.76
	5/30/12		64.80	1092.74
	8/29/12		64.28	1093.26
	12/5/12		64.01	1093.53
	2/18/13		63.62	1093.92
	5/22/13		63.93	1093.61
	8/19/13		64.75	1092.79
	11/20/13		64.86	1092.68
	2/17/14		64.63	1092.91
	5/27/14		65.42	1092.12
	8/17/14	1157.537	66.45	1091.09
	11/13/14		65.28	1092.26
	2/23/15		64.90	1092.64
	5/26/15		65.44	1092.09
	8/27/15		66.35	1091.19
	11/19/15		66.02	1091.52
	2/24/16		65.92	1091.62
	5/24/16		65.96	1091.58
	8/23/16		66.47	1091.07
	11/15/16		66.30	1091.24
	2/21/17		66.46	1091.08
	5/23/17		66.45	1091.09
	8/29/17		67.38	1090.16
	11/14/17		67.56	1089.98
	2/27/18		66.94	1090.60
	5/29/18		67.22	1090.32
	8/21/18		67.98	1089.56
	11/13/18		67.54	1090.00

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
LB-7R	9/23/08	1156.087	75.08	1081.00
	10/31/08		72.98	1083.11
	12/17/08		72.15	1083.94
	1/21/09		70.58	1085.51
	2/19/09		70.32	1085.77
	3/25/09		71.35	1084.74
	4/9/09		70.40	1085.69
	4/29/09		70.56	1085.53
	6/16/09		72.65	1083.44
	7/21/09		73.04	1083.05
	9/1/09		73.30	1082.79
	10/20/09		73.07	1083.02
	3/8/10		70.92	1085.17
	4/19/10		70.82	1085.27
	7/29/10		71.03	1085.06
	1/11/11	1155.87 *	68.06	1087.81
	3/18/11		67.94	1087.93
	5/23/11		67.71	1088.16
	7/26/11		67.45	1088.42
	11/14/11		66.52	1089.35
	2/23/12		66.40 (P.L.)	1089.47
	4/26/12		65.74 (P.L.)	1090.13
	9/26/12		64.98 (P.L.)	1090.89
	12/5/12		64.79 (P.L.)	1091.08
	2/18/13		64.40 (P.L.)	1091.47
	4/15/13		62.78 ⁽¹⁾	1093.09
	5/8/13		63.40 ⁽²⁾	1092.47
	5/23/13		64.74 (P.L.)	1091.13
	8/19/13		63.64 (P.L.)	1092.23
	11/21/13		65.79 (P.L.)	1090.08
	2/18/14		65.40 (P.L.)	1090.47
	5/28/14		65.42 (P.L.)	1090.45
	8/18/14		65.55	1090.32
	8/19/14		67.26 (P.L.)	1088.61
	11/13/14		66.09 (P.L.)	1089.78
	2/23/15		Not Measured; Pump non-operable	
	5/29/15		64.67	1091.20
	8/28/15	1155.87	65.45	1090.42
	11/19/15		65.11	1090.76
	2/24/16		65.03	1090.84
	5/25/16		65.17	1090.70
	8/24/16		65.56	1090.31
	11/16/16		65.21	1090.66
	2/22/17		65.23	1090.64
	5/24/17		65.53	1090.34
	8/30/17		66.47	1089.40
	11/15/17		Not Measured; Post ISCO	
	2/28/18		Not Measured; Post ISCO	
	5/30/18		66.55	1089.32
	8/22/18		67.24	1088.63
	11/14/18		66.44	1089.43

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-2S	9/23/08	1155.564	73.90	1081.66
	10/31/08		72.37	1083.19
	12/17/08		71.60	1083.96
	1/21/09		69.98	1085.58
	2/19/09		69.77	1085.79
	3/25/09		70.78	1084.78
	4/9/09		69.88	1085.68
	4/29/09		70.04	1085.52
	6/16/09		72.14	1083.42
	7/21/09		72.05	1083.51
	9/1/09		72.78	1082.78
	10/20/09		72.55	1083.01
	3/8/10		70.36	1085.20
	4/19/10		70.33	1085.23
	7/29/10		70.50	1085.06
	1/11/11	1154.84 *	67.45	1087.39
	3/18/11		67.35	1087.49
	7/26/11		66.84	1088.00
	11/14/11		65.92	1088.92
	2/23/12		66.20 (P.L.)	1088.64
	4/26/12		65.51 (P.L.)	1089.33
	9/26/12		64.70 (P.L.)	1090.14
	12/5/12		64.62 (P.L.)	1090.22
	2/18/13		64.20 (P.L.)	1090.64
	5/8/13		62.80 ⁽²⁾	1092.04
	5/23/13		64.59 (P.L.)	1090.25
	8/19/13		65.36 (P.L.)	1089.48
	11/21/13		65.47 (P.L.)	1089.37
	2/18/14		65.09 (P.L.)	1089.75
	5/28/14		65.65 (P.L.)	1089.19
	8/18/14		64.87	1089.97
	8/19/14	1154.84 *	67.09 (P.L.)	1087.75
	11/13/14		65.85 (P.L.)	1088.99
	2/23/15		65.95 (P.L.)	1088.89
	5/29/15		64.00	1090.84
	8/28/15		64.87	1089.97
	11/19/15		64.51	1090.33
	2/24/16		64.37	1090.47
	5/25/16		64.50	1090.34
	8/24/16		64.91	1089.93
	11/16/16		64.57	1090.27
	2/22/17		64.57	1090.27
	5/24/17		64.90	1089.94
	8/30/17		65.88	1088.96
	11/15/17		66.01	1088.83
	2/28/18		65.65	1089.19
	5/30/18		65.86	1088.98
	8/22/18		66.61	1088.23
	11/14/18		65.79	1089.05

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-2D	9/23/08	1155.555	73.95	1081.61
	10/31/08		72.30	1083.26
	12/17/08		71.51	1084.05
	1/21/09		69.90	1085.66
	2/19/09		69.70	1085.86
	3/25/09		70.73	1084.83
	4/8/09		69.80	1085.76
	4/29/09		69.95	1085.61
	6/15/09		72.05	1083.51
	7/21/09		72.45	1083.11
	8/31/09		72.68	1082.88
	10/20/09		72.49	1083.07
	3/8/10		70.29	1085.27
	4/19/10		70.23	1085.33
	7/29/10		70.43	1085.13
	1/11/11		67.81	1087.75
	3/18/11		67.70	1087.86
	7/26/11		67.22	1088.34
	11/14/11		66.27	1089.29
	11/15/11		66.40	1089.16
	2/23/12		64.45	1091.11
	4/26/12		63.82	1091.74
	5/30/12		63.84	1091.72
	8/29/12		63.33	1092.23
	12/5/12		62.97	1092.59
	2/18/13		62.60	1092.96
	5/23/13		62.98	1092.58
	8/19/13	1155.555	63.66	1091.90
	11/20/13		63.84	1091.72
	2/19/14		63.31	1092.25
	5/27/14		64.32	1091.24
	8/19/14		65.49	1090.07
	11/12/14		64.09	1091.47
	2/23/15		63.96	1091.60
	5/26/15		64.33	1091.22
	8/26/15		65.37	1090.19
	11/17/15		64.91	1090.65
	2/23/16		64.58	1090.98
	5/24/16		64.78	1090.78
	8/23/16		65.32	1090.24
	11/15/16		65.11	1090.45
	2/21/17		65.28	1090.28
	5/23/17		65.40	1090.16
	8/29/17		66.30	1089.26
	11/14/17		66.43	1089.13
	2/27/18		65.78	1089.78
	5/29/18		66.07	1089.49
	8/21/18		66.99	1088.57
	11/13/18		66.37	1089.19

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-3	11/16/11	1153.12	64.96	1088.16
	2/24/12		63.00	1090.12
	4/26/12		62.15	1090.97
	5/31/12		62.06	1091.06
	8/30/12		61.66	1091.46
	12/6/12		61.19	1091.93
	2/19/13		60.75	1092.37
	5/23/13		61.39	1091.73
	8/20/13		62.28	1090.84
	11/21/13		62.26	1090.86
	2/19/14		61.74	1091.38
	5/28/14		62.59	1090.53
	8/17/14		63.70	1089.42
	11/13/14		62.48	1090.64
	2/26/15		62.11	1091.01
	5/28/15		62.80	1090.32
	8/28/15		63.70	1089.42
	11/19/15		63.24	1089.88
	2/23/16		62.98	1090.14
	5/25/16		63.26	1089.86
	8/24/16		63.67	1089.45
	11/16/16		63.31	1089.81
	2/22/17		63.32	1089.80
	5/24/17	1153.12	63.71	1089.41
	8/30/17		64.65	1088.47
	11/15/17		64.76	1088.36
	2/28/18		64.37	1088.75
	5/30/18		64.64	1088.48
	8/22/18		65.40	1087.72
	11/14/18		64.58	1088.54
PT-3D	4/26/12	1153.53	62.46	1091.07
	5/31/12		62.40	1091.13
	8/30/12		62.04	1091.49
	12/6/12		61.58	1091.95
	2/19/13		61.14	1092.39
	5/23/13		61.75	1091.78
	8/20/13		62.70	1090.83
	11/21/13		62.67	1090.86
	2/19/14		62.11	1091.42
	5/28/14		63.00	1090.53
	8/17/14		64.13	1089.40
	11/13/14		62.87	1090.66
	2/26/15		62.49	1091.04
	5/27/15		63.08	1090.45
	8/26/15		64.20	1089.33
	11/17/15		63.73	1089.80
	2/23/16		63.37	1090.16
	5/25/16		63.62	1089.91
	8/24/16		64.05	1089.48
	11/16/16		63.70	1089.83
	2/22/17		63.69	1089.84
	5/24/17		64.07	1089.46
	8/30/17		65.04	1088.49
	11/15/17		65.15	1088.38
	2/28/18		64.72	1088.81
	5/30/18		64.95	1088.58
	8/22/18		65.78	1087.75
	11/14/18		64.93	1088.60

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-4	11/14/11	1151.22	64.38	1086.84
	11/16/11		64.65	1086.57
	2/24/12		62.36	1088.86
	4/26/12		61.50	1089.72
	5/31/12		61.46	1089.76
	8/30/12		61.07	1090.15
	12/6/12		60.57	1090.65
	2/19/13		60.12	1091.10
	5/23/13		60.76	1090.46
	8/20/13		61.87	1089.35
	11/21/13	1151.22	61.62	1089.60
	2/17/14		61.04	1090.18
	5/28/14		61.94	1089.28
	8/19/14		63.08	1088.14
	11/12/14		61.72	1089.50
	2/26/15		61.30	1089.92
	5/26/15		62.03	1089.19
	8/26/15		63.08	1088.14
	11/17/15		62.59	1088.63
	2/24/16		62.32	1088.90
	5/24/16		62.37	1088.85
	8/23/16		62.94	1088.28
	11/15/16		62.61	1088.61
	2/21/17		62.72	1088.50
	5/23/17		63.06	1088.16
	8/29/17		64.10	1087.12
	11/14/17		64.05	1087.17
	2/27/18		63.38	1087.84
	5/29/18		63.61	1087.61
	8/21/18		64.17	1087.05
	11/13/18		63.93	1087.29
PT-4D	4/26/12	1151.18	61.35	1089.83
	5/31/12		61.37	1089.81
	8/30/12		60.98	1090.20
	12/6/12		60.47	1090.71
	2/19/13		60.02	1091.16
	5/23/13		60.65	1090.53
	8/20/13		61.76	1089.42
	11/21/13		61.49	1089.69
	2/17/14		61.01	1090.17
	5/28/14		61.84	1089.34
	8/19/14		63.02	1088.16
	11/12/14		61.65	1089.53
	2/26/15		61.20	1089.98
	5/26/15		61.90	1089.28
	8/26/15		63.07	1088.11
	11/17/15		62.49	1088.69
	2/23/16		62.08	1089.10
	5/24/16		62.27	1088.91
	8/23/16		62.84	1088.34
	11/15/16		62.55	1088.63
	2/21/17		62.69	1088.49
	5/23/17		62.98	1088.20
	8/29/17		63.91	1087.27
	11/14/17		63.97	1087.21
	2/27/18	1151.18	63.29	1087.89
	5/29/18		63.57	1087.61
	8/21/18		64.60	1086.58
	11/13/18		63.86	1087.32

TABLE I
GROUNDWATER ELEVATION AND DEPTH TO WATER IN
PLYMOUTH TUBE MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet amsl)
PT-5	11/14/11	1150.65	64.08	1086.57
	11/15/11		64.13	1086.52
	2/24/12		61.95	1088.70
	4/26/12		61.19	1089.46
	5/30/12		61.15	1089.50
	8/29/12		60.73	1089.92
	12/5/12		60.18	1090.47
	2/18/13		59.87	1090.78
	5/23/13		60.31	1090.34
	8/20/13		61.48	1089.17
	11/20/13		61.08	1089.57
	2/17/14		60.74	1089.91
	5/27/14		61.57	1089.08
	8/19/14		62.69	1087.96
	11/12/14		61.30	1089.35
	2/23/15		60.99	1089.66
	5/26/15		61.61	1089.04
	8/26/15		62.72	1087.93
	11/17/15		62.18	1088.47
	2/23/16		61.78	1088.87
	5/24/16		61.97	1088.68
	8/23/16		62.55	1088.10
	11/15/16		62.26	1088.39
	2/21/17		62.35	1088.30
	5/23/17		62.66	1087.99
	8/29/17		63.65	1087.00
	11/14/17		63.69	1086.96
	2/27/18		62.99	1087.66
	5/29/18		63.27	1087.38
	8/21/18		64.31	1086.34
	11/13/18		63.62	1087.03

Notes:

⁽¹⁾ - Static groundwater measurement 18 days after the pump was shut off.

⁽²⁾ - Static groundwater measurement 41 days after the pump was shut off.

* LB-7R and PT-2S re-surveyed on 15 September 2010 after pump was installed in each well. Survey elevation is measured at Well Seal.

btoc = below top of the casing

feet amsl = feet above mean sea level

(P.L.) = Pumping Level

TABLE II
GROUNDWATER ELEVATION AND DEPTH TO WATER IN SELECT GILA RIVER
INDIAN COMMUNITY MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater Measurement (feet btoc)	Groundwater Elevation (feet amsl)
LB-1	5/22/13	1147.99	58.62	1089.37
	11/20/13		59.50	1088.49
	2/18/14		58.82	1089.17
	8/18/14		60.92	1087.07
	11/11/14		59.40	1088.59
	2/25/15		59.22	1088.77
	5/27/15		59.22	1088.77
	8/27/15		60.99	1087.00
	11/18/15		60.26	1087.73
	2/25/16		60.04	1087.95
	5/26/16		60.21	1087.78
	8/25/16		61.21	1086.78
	11/17/16		60.44	1087.55
	2/23/17		60.12	1087.87
	5/25/17		61.24	1086.75
	8/31/17		61.08	1086.91
	11/16/17		61.87	1086.12
	3/1/18		61.39	1086.60
	5/31/18		61.66	1086.33
	8/23/18		62.54	1085.45
	11/15/18		61.48	1086.51
LB-13	5/22/13	1135.59	51.80	1083.79
	11/20/13		52.03	1083.56
	2/18/14		51.19	1084.40
	8/18/14		53.65	1081.94
	11/11/14		51.45	1084.14
	2/25/15		51.21	1084.38
	5/27/15		52.42	1083.17
	8/27/15		53.65	1081.94
	11/18/15		52.41	1083.18
	2/25/16		51.98	1083.61
	5/26/16		52.12	1083.47
	8/25/16		53.19	1082.40
	11/17/16		52.42	1083.17
	2/23/17		52.10	1083.49
	5/25/17		53.54	1082.05
	8/31/17		55.70	1079.89
	11/16/17		54.15	1081.44
	3/1/18		53.59	1082.00
	5/31/18		53.95	1081.64
	8/23/18		55.10	1080.49
	11/15/18		53.86	1081.73

TABLE II
GROUNDWATER ELEVATION AND DEPTH TO WATER IN SELECT GILA RIVER
INDIAN COMMUNITY MONITOR WELLS
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Date of Measurement	Top of Casing (feet amsl)	Depth to Groundwater Measurement (feet btoc)	Groundwater Elevation (feet amsl)
LB-17	5/22/13	1129.79	50.14	1079.65
	11/20/13		51.18	1078.61
	2/18/14		50.05	1079.74
	8/18/14		52.92	1076.87
	11/11/14		50.45	1079.34
	2/25/15		49.75	1080.04
	5/27/15		51.71	1078.08
	8/27/15		52.89	1076.90
	11/18/15		50.96	1078.83
	2/25/16		50.39	1079.40
	5/26/16		50.44	1079.35
	8/25/16		51.34	1078.45
	11/17/16		50.94	1078.85
	2/23/17		50.20	1079.59
	5/25/17		52.54	1077.25
	8/31/17		54.01	1075.78
	11/16/17		52.89	1076.90
	3/1/18		52.48	1077.31
	5/31/18		52.91	1076.88
	8/23/18		54.25	1075.54
	11/15/18		52.72	1077.07
PT-6D	11/11/14	1135.79	52.04	1083.75
	2/25/15		51.50	1084.29
	5/27/15		52.72	1083.07
	8/27/15		52.89	1082.90
	11/18/15		52.68	1083.11
	2/25/16		52.24	1083.55
	5/26/16		52.39	1083.40
	8/25/16		53.45	1082.34
	11/17/16		52.67	1083.12
	2/23/17		52.36	1083.43
	5/25/17		53.84	1081.95
	8/31/17		54.92	1080.87
	11/16/17		54.41	1081.38
	3/1/18		53.86	1081.93
	5/31/18		54.26	1081.53
	8/23/18		55.37	1080.42
	11/15/18		54.12	1081.67

Notes:

feet amsl = feet above mean sea level

feet btoc = feet below top of casing

ID = Identification

LB = Lone Butte

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1S	90	Trichloroethene	09/23/08	46	5
			04/08/09	100	
			06/15/09	60	
			09/01/09	50	
			01/28/10	25	
			07/10/10	23	
			11/15/11	5.5	
			02/23/12	3.0	
			05/30/12	3.3	
			08/29/12	2.5	
			12/05/12	3.3	
			02/18/13	3.7	
			05/22/13	4.3	
			08/19/13	7.9	
			11/20/13	22.3	
			02/17/14	29.8	
			05/27/14	74.2	
			08/17/14	92.2	
			11/13/14	50.3	
			02/23/15	49.8	
			05/28/15	71.4*	
			08/28/15	64.0	
			11/19/15	83.8	
			02/24/16	72.6	
			05/25/16	81.9	
			08/24/16	78.6	
			11/16/16	98.1	
			02/22/17	76.1	
			05/24/17	89.9	
			08/30/17	94.8 ^(g)	
			11/15/17	87.7	
			02/28/18	133.0	
			03/15/18	96.3 ^(r)	
			05/30/18	123	
			08/22/18	161	
			11/14/18	1.3	
		1,1-Dichloroethene	09/23/08	12	7
			04/08/09	26	
			06/15/09	24	
			09/01/09	22	
			01/28/10	9.4	
			07/10/10	7.3	
			11/15/11	ND (<2.0)	
			02/23/12	ND (<2.0)	
			05/30/12	0.71	
			08/29/12	0.39 (J)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1S	90	'1,1-Dichloroethene	12/05/12	0.72	7
			02/18/13	0.83	
			05/22/13	0.95	
			08/19/13	2.3	
			11/20/13	5.7	
			02/17/14	8.1	
			05/27/14	18.8	
			08/17/14	24.2	
			11/13/14	16.6	
			02/23/15	17.3	
			05/28/15	18.1*	
			08/28/15	20.3	
			11/19/15	30.1	
			02/24/16	22.5	
			05/25/16	26.2	
			08/24/16	26.0	
			11/16/16	29.6	
			02/22/17	22.7	
			05/24/17	32.9	
			08/30/17	26.7	
			11/15/17	26.5	
			02/28/18	42.5	
			03/15/18	26.4 ^(r)	
			05/30/18	35.8	
			08/22/18	55.3	
			11/14/18	ND (<1.0)	
		Tetrachloroethene	09/23/08	ND (<0.5)	5
			04/08/09	0.93	
			06/15/09	ND (<0.50)	
			09/01/09	ND (<0.50)	
			01/28/10	ND (<0.50)	
			07/10/10	ND (<0.50)	
			11/15/11	ND (<1.0)	
			02/23/12	ND (<1.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/22/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/27/14	0.56	
			08/17/14	0.44 (J)	
			11/13/14	ND (<0.50)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1S	90	Tetrachloroethene	02/23/15	ND (<0.50)	5
			05/28/15	0.34 (J) *	
			08/28/15	0.38 (J)	
			11/19/15	0.37 (J)	
			02/24/16	0.36 (J)	
			05/25/16	0.42 (J)	
			08/24/16	0.50 (J)	
			11/16/16	0.32 (J)	
			02/22/17	ND (<0.50)	
			05/24/17	0.35 (J)	
			08/30/17	0.28 (J)	
			11/15/17	ND (<0.50)	
			02/28/18	0.43 (J)	
			03/15/18	0.36 (J) ⁽⁷⁾	
			05/30/18	0.46 (J)	
			08/22/18	0.45 (J)	
			11/14/18	ND (<1.0)	
		1,4-Dioxane	09/24/08	1.5	N/A
			11/15/11	1.2	
			02/23/12	ND (<2.0)	
			05/30/12	ND (<2.0)	
			08/29/12	ND (<2.0)	
			12/05/12	0.67 (J)	
			02/18/13	0.67 (J)	
			05/22/13	0.94 (J)	
			08/19/13	1.5 (J)	
			11/20/13	4.6	
			02/17/14	5.0	
			05/27/14	10.5	
			08/17/14	18.2	
			11/13/14	8.4	
			02/23/15	12.7	
			05/28/15	7.9 *	
			08/28/15	11.9	
			11/19/15	10.3	
			02/24/16	13.1	
			05/25/16	16.5	
			08/24/16	13.7	
			11/16/16	16.9	
			02/22/17	13.0	
			05/24/17	15.5	
			08/30/17	13.4	
			11/15/17	16.2	
			02/28/18	22.2	
			03/15/18	15.1 ⁽⁷⁾	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1S	90	'1,4-Dioxane	05/30/18	18.5	N/A
			08/22/18	22.2	
			11/14/18	1.2	
PT-1D	120	Trichloroethene	09/24/08	ND (<0.50)	5
			04/07/09	ND (<0.50)	
			06/15/09	ND (<0.50)	
			08/31/09	ND (<0.50)	
			01/28/10	ND (<0.50)	
			07/10/10	ND (<0.50)	
			11/15/11	ND (<1.0)	
			02/23/12	ND (<1.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/22/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/27/14	ND (<0.50)	
			08/17/14	ND (<0.50)	
			11/13/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/19/15	ND (<0.50)	
			02/24/16	0.22 (J)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	0.17 (J)	
			11/14/17	ND (<0.50)	
			02/27/18	0.30 (J)	
			05/29/18	0.35 (J)	
			08/21/18	7.1	
			11/13/18	ND (<1.0)	7
		1,1-Dichloroethene	09/24/08	ND (<0.50)	
			04/07/09	ND (<0.50)	
			06/15/09	ND (<0.50)	
			08/31/09	ND (<0.50)	
			01/28/10	ND (<0.50)	
			07/10/10	ND (<0.50)	
			11/15/11	ND (<2.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1D	120	1,1-Dichloroethene	02/23/12	ND (<2.0)	7
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/22/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/27/14	ND (<0.50)	
			08/17/14	ND (<0.50)	
			11/13/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/19/15	ND (<0.50)	
			02/24/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	1.7	
			11/13/18	ND (<1.0)	
	120	Tetrachloroethene	09/24/08	ND (<0.50)	5
			04/07/09	ND (<0.50)	
			06/15/09	ND (<0.50)	
			08/31/09	ND (<0.50)	
			01/28/10	ND (<0.50)	
			07/10/10	ND (<0.50)	
			11/15/11	ND (<1.0)	
			02/23/12	ND (<1.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/22/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/27/14	ND (<0.50)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1D	120	'Tetrachloroethene	08/17/14	ND (<0.50)	5
			11/13/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/19/15	ND (<0.50)	
			02/24/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		1,4-Dioxane	11/15/11	ND (<2.0)	N/A
			02/23/12	ND (<2.0)	
			05/30/12	ND (<2.0)	
			08/29/12	ND (<2.0)	
			12/05/12	0.72 (J)	
			02/18/13	ND (<2.0)	
			05/22/13	ND (<2.0)	
			08/19/13	ND (<2.0)	
			11/20/13	ND (<2.0)	
			02/17/14	0.62 (J)	
			05/27/14	ND (<2.0)	
			08/17/14	ND (<2.0)	
			11/13/14	ND (<2.0)	
			02/23/15	ND (<2.0)	
			05/26/15	ND (<2.0)	
			08/26/15	ND (<2.0)	
			11/19/15	ND (<2.0)	
			02/24/16	ND (<2.0)	
			05/24/16	ND (<2.0)	
			08/23/16	ND (<2.0)	
			11/15/16	ND (<2.0)	
			02/21/17	ND (<1.0)	
			05/23/17	ND (<1.0)	
			08/29/17	ND (<1.0)	
			11/14/17	0.30 (J)	
			02/27/18	ND (<1.0)	
			05/29/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-1D	120	'1,4-Dioxane	08/21/18	ND (<1.0)	N/A
			11/13/18	ND (<1.0)	
LB-7R	90	Trichloroethene	08/29/07	3400	5
			04/09/09	1300	
			06/16/09	1300	
			09/01/09	870	
			01/28/10	950	
			07/10/10	770	
			11/16/11	230	
			02/23/12	130	
			05/31/12	150	
			08/29/12	139	
			12/06/12	109	
			02/18/13	141	
			05/08/13	157 ⁽¹⁾	
			05/23/13	97.3	
			08/19/13	136 ⁽²⁾	
			11/21/13	142	
			02/18/14	103	
			05/28/14	113	
			08/19/14	167 ⁽³⁾	
			11/13/14	155	
			02/23/15	NS ⁽⁴⁾	
			05/29/15	6910 ⁽⁵⁾ *	
			08/28/15	10400 ⁽⁵⁾	
			11/19/15	9350	
			02/24/16	2450	
			05/25/16	2800 ⁽⁵⁾	
			08/24/16	3100 ⁽⁵⁾	
			11/16/16	8080 ⁽⁵⁾	
			02/22/17	9190 ⁽⁵⁾	
			05/24/17	8950 ⁽⁵⁾	
			08/30/17	5280 ⁽⁵⁾	
			11/15/17	NS ⁽⁴⁾	
			02/28/18	NS ⁽⁴⁾	
			05/30/18	22.7	
			08/22/18	43.1	
			11/14/18	86.9	
		1,1-Dichloroethene	08/29/07	230	7
			04/09/09	120	
			06/16/09	120	
			09/01/09	100	
			01/28/10	140	
			07/10/10	110	
			11/16/11	22	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
LB-7R	90	'1,1-Dichloroethene	02/23/12	19	7
			05/31/12	23	
			08/29/12	17.2	
			12/06/12	18.8	
			02/18/13	20	
			05/08/13	13.1 ⁽¹⁾	
			05/23/13	13.7	
			08/19/13	17.0 ⁽²⁾	
			11/21/13	17.7	
			02/18/14	13.5	
			05/28/14	15.6	
			08/19/14	17.2 ⁽³⁾	
			11/13/14	20.9	
			02/23/15	NS ⁽⁴⁾	
			05/29/15	386 ^{(5)*}	
			08/28/15	576 ⁽⁵⁾	
			11/19/15	613	
			02/24/16	179	
			05/25/16	212 ⁽⁵⁾	
			08/24/16	240 ⁽⁵⁾	
			11/16/16	540 ⁽⁵⁾	
			02/22/17	482 ⁽⁵⁾	
			05/24/17	540 ⁽⁵⁾	
			08/30/17	330	
			11/15/17	NS ⁽⁴⁾	
			02/28/18	NS ⁽⁴⁾	
			05/30/18	< 10	
			08/22/18	ND (<1.0)	
			11/14/18	ND (<1.0)	
	90	Tetrachloroethene	08/29/07	2.5	5
			04/09/09	0.71	
			06/16/09	0.51	
			09/01/09	ND (<0.50)	
			01/28/10	0.55	
			07/10/10	ND (<5.0)	
			11/16/11	ND (<1.0)	
			02/23/12	ND (<1.0)	
			05/31/12	ND (<1.3)	
			08/29/12	ND (<1.0)	
			12/06/12	ND (<1.0)	
			02/18/13	ND (<1.0)	
			05/08/13	ND (<1.0) ⁽¹⁾	
			05/23/13	ND (<1.0)	
			08/19/13	ND (<1.0) ⁽²⁾	
			11/21/13	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
LB-7R	90	Tetrachloroethene	02/18/14	ND (<1.0)	5
			05/28/14	ND (<1.0)	
			08/19/14	ND (<1.3) ⁽³⁾	
			11/13/14	ND (<1.0)	
			02/23/15	NS ⁽⁴⁾	
			05/29/15	5.2 *	
			08/28/15	12.0	
			11/19/15	ND (<100)**	
			02/24/16	ND (<25)**	
			05/25/16	2.0	
			08/24/16	1.9	
			11/16/16	3.2	
			02/22/17	ND (<25)**	
			05/24/17	3.8	
			08/30/17	1.7 (J)	
			11/15/17	NS ⁽⁴⁾	
			02/28/18	NS ⁽⁴⁾	
			05/30/18	< 10	
			08/22/18	ND (<1.0)	
			11/14/18	ND (<1.0)	
		1,4-Dioxane	11/16/11	9.3	N/A
			02/23/12	9.2	
			05/31/12	6.6	
			08/29/12	6.8	
			12/06/12	5.7	
			02/18/13	6.0	
			05/08/13	7.3 ⁽¹⁾	
			05/23/13	4.7	
			08/19/13	5.5 ⁽²⁾	
			11/21/13	7.2	
			02/18/14	6.0	
			05/28/14	5.2	
			08/19/14	10.6 ⁽³⁾	
			11/13/14	9.2	
			02/23/15	NS ⁽⁴⁾	
			05/29/15	604 *	
			08/28/15	1570	
			11/19/15	633	
			02/24/16	269	
			05/25/16	343	
			08/24/16	218	
			11/16/16	757	
			02/22/17	1250	
			05/24/17	1340	
			08/30/17	760	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
LB-7R	90	'1,4-Dioxane	11/15/17	NS ⁽⁴⁾	N/A
			02/28/18	NS ⁽⁴⁾	
			05/30/18	5.0	
			08/22/18	9.3	
			11/14/18	10.1	
PT-2S	90	Trichloroethene	09/23/08	920	5
			04/09/09	1100	
			06/16/09	950	
			09/01/09	950	
			01/28/10	1500	
			07/10/10	1400	
			11/16/11	520	
			02/23/12	150	
			05/31/12	143	
			08/29/12	115	
			12/06/12	99.7	
			02/18/13	101	
			05/08/13	588 ⁽¹⁾	
			05/23/13	116	
			08/19/13	123 ⁽²⁾	
			11/21/13	105	
			02/18/14	91.5	
			05/28/14	88.7	
			08/19/14	90.9 ⁽³⁾	
			11/13/14	88.9	
			02/23/15	73.1	
			05/29/15	267 ⁽⁵⁾ *	
			08/28/15	247 ⁽⁵⁾	
			11/19/15	454 ⁽⁵⁾	
			02/24/16	499	
			05/25/16	424 ⁽⁵⁾	
			08/24/16	598 ⁽⁵⁾	
			11/16/16	626 ⁽⁵⁾	
			02/22/17	562	
			05/24/17	467	
			08/30/17	548 ⁽⁵⁾	
			11/15/17	538 ⁽⁵⁾	
			02/28/18	705 ⁽⁶⁾	
			03/15/18	645 ⁽⁸⁾	
			05/30/18	566	
			08/22/18	670	
			11/14/18	794 ^(e)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2S	90	1,1-Dichloroethene	09/23/08	100	7
			04/09/09	150	
			06/16/09	140	
			09/01/09	170	
			01/28/10	230	
			07/10/10	180	
			11/16/11	78	
			02/23/12	22	
			05/31/12	21	
			08/29/12	16.4	
			12/06/12	16.4	
			02/18/13	12.6	
			05/08/13	77.2 ⁽¹⁾	
			05/23/13	15.7	
			08/19/13	18.7 ⁽²⁾	
			11/21/13	14.7	
			02/18/14	12.8	
			05/28/14	11.2	
			08/19/14	11.3 ⁽³⁾	
			11/13/14	11.1	
			02/23/15	12.9	
			05/29/15	47.4 *	
			08/28/15	46.5	
			11/19/15	78.5	
			02/24/16	58.8	
			05/25/16	76.7	
			08/24/16	94.2	
			11/16/16	99.8	
			02/22/17	70.7	
			05/24/17	58.3	
			08/30/17	86.0 ⁽⁵⁾	
			11/15/17	90.8	
			02/28/18	143.0	
			03/15/18	104 ⁽⁸⁾	
			05/30/18	102.0	
			08/22/18	152.0	
			11/14/18	163	
		Tetrachloroethene	09/23/08	1.0	5
			04/09/09	0.96	
			06/16/09	0.62	
			09/01/09	0.88	
			01/28/10	0.90	
			07/10/10	ND (<10)	
			11/16/11	1.0	
			02/23/12	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2S	90	Tetrachloroethene	05/31/12	ND (<1.3)	5
			08/29/12	ND (<1.0)	
			12/06/12	ND (<1.0)	
			02/18/13	ND (<1.0)	
			05/08/13	ND (<5.0) ⁽¹⁾	
			05/23/13	ND (<1.0)	
			08/19/13	ND (<1.0) ⁽²⁾	
			11/21/13	ND (<1.0)	
			02/18/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/19/14	ND (<1.0) ⁽³⁾	
			11/13/14	ND (<1.0)	
			02/23/15	ND (<0.50)	
			05/29/15	0.32 (J)	
			08/28/15	0.42 (J)	
			11/19/15	ND (<2.5)	
			02/24/16	ND (<5.0)	
			05/25/16	0.62	
			08/24/16	0.81	
			11/16/16	0.51	
			02/22/17	ND (<2.5)	
			05/24/17	0.42 (J)	
			08/30/17	0.33 (J)	
			11/15/17	0.37 (J)	
			02/28/18	0.59	
			03/15/18	ND (<0.30) ⁽⁸⁾	
			05/30/18	0.81 (J)	
			08/22/18	0.50 (J)	
			11/14/18	0.40 (J)	
		1,4-Dioxane	09/23/08	21	N/A
			11/16/11	28	
			02/23/12	9.1	
			05/31/12	6.6	
			08/29/12	5.6	
			12/06/12	6.5	
			02/18/13	4.7	
			05/08/13	31.4 ⁽¹⁾	
			05/23/13	4.1	
			08/19/13	5.7 ⁽²⁾	
			11/21/13	4.6	
			02/18/14	4.6	
			05/28/14	3.6	
			08/19/14	4.6 ⁽³⁾	
			11/13/14	3.3	
			02/23/15	2.7	

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 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2S	90	1,4-Dioxane	05/29/15	14.4*	N/A
			08/28/15	18.8	
			11/19/15	25.5	
			02/24/16	29.5	
			05/25/16	32.6	
			08/24/16	35.7	
			11/16/16	39.5	
			02/22/17	33.2	
			05/24/17	31.9	
			08/30/17	35.2	
			11/15/17	42.3	
			02/28/18	45.5	
			03/15/18	42.2 ⁽⁸⁾	
			05/30/18	36.5	
			08/22/18	42.4	
			11/14/18	47.0	
PT-2D	120	Trichloroethene	09/23/08	23	5
			04/08/09	53	
			06/15/09	26	
			08/31/09	19	
			01/28/10	10	
			07/10/10	12	
			11/15/11	2.5	
			02/23/12	ND (<1.0)	
			05/30/12	0.23 (J)	
			08/29/12	ND (<0.50)	
			12/05/12	0.26 (J)	
			02/18/13	0.25 (J)	
			05/23/13	ND (<0.50)	
			08/19/13	0.69	
			11/20/13	ND (<0.50)	
			02/19/14	0.44 (J)	
			05/27/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	1.1	
			08/26/15	1.9	
			11/17/15	1.8	
			02/23/16	1.7	
			05/24/16	1.9	
			08/23/16	1.8	
			11/15/16	1.9	
			02/21/17	2.0	
			05/23/17	2.0	

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 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2D	120	Trichloroethene	08/29/17	2.0	5
			11/14/17	1.6	
			02/27/18	2.1	
			05/29/18	3.0	
			08/21/18	2.6	
			11/13/18	2.2	
		1,1-Dichloroethene	09/23/08	3.2	7
			04/08/09	12	
			06/15/09	5.8	
			08/31/09	2.2	
			01/28/10	2.2	
			07/10/10	3.4	
			11/15/11	ND (<2.0)	
			02/23/12	ND (<2.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/19/14	ND (<0.50)	
			05/27/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	0.22 (J)	
			08/23/16	ND (<0.50)	
			11/15/16	0.24 (J)	
			02/21/17	0.39 (J)	
			05/23/17	0.52	
			08/29/17	0.36 (J)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	0.33 (J)	
			08/21/18	0.47 (J)	
			11/13/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2D	128	Tetrachloroethene	09/23/08	ND (<0.50)	5
			04/08/09	ND (<0.50)	
			06/15/09	ND (<0.50)	
			08/31/09	ND (<0.50)	
			01/28/10	ND (<0.50)	
			07/10/10	ND (<0.50)	
			11/15/11	ND (<1.0)	
			02/23/12	ND (<1.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/19/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/19/14	ND (<0.50)	
			05/27/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-2D	128	1,4-Dioxane	11/15/11	ND (<2.0)	N/A
			02/23/12	ND (<2.0)	
			05/30/12	ND (<2.0)	
			08/29/12	ND (<2.0)	
			12/05/12	ND (<2.0)	
			02/18/13	ND (<2.0)	
			05/23/13	ND (<2.0)	
			08/19/13	ND (<2.0)	
			11/20/13	ND (<2.0)	
			02/19/14	ND (<2.0)	
			05/27/14	ND (<2.0)	
			08/19/14	ND (<2.0)	
			11/12/14	ND (<2.0)	
			02/23/15	ND (<2.0)	
			05/26/15	ND (<2.0)	
			08/26/15	ND (<2.0)	
			11/17/15	ND (<2.0)	
			02/23/16	ND (<2.0)	
			05/24/16	ND (<2.0)	
			08/23/16	1.6 (J)	
			11/15/16	ND (<2.0)	
			02/21/17	ND (<1.0)	
			05/23/17	ND (<1.0)	
			08/29/17	ND (<1.0)	
			11/14/17	0.35 (J)	
			02/27/18	ND (<1.0)	
			05/29/18	ND (<1.0)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3	90	Trichloroethene	11/16/11	230	5
			02/24/12	160	
			05/31/12	143	
			08/30/12	96.8	
			12/06/12	89.4	
			02/19/13	99.1	
			05/23/13	93.7	
			08/20/13	96.7	
			11/21/13	108	
			02/19/14	89.3	
			05/28/14	52.2	
			08/17/14	92.0	
			11/13/14	73.5	
			02/26/15	72.7	
			05/28/15	73.2*	
			08/28/15	98.3	
			11/19/15	116	
			02/23/16	112	
			05/25/16	94.1	
			08/24/16	129 ^(b)	
			11/16/16	166	
			02/22/17	164	
			05/24/17	132	
			08/30/17	166 ^(b)	
			11/15/17	168	
			02/28/18	196	
			03/15/18	172 ^(b)	
			05/30/18	181	
			08/22/18	188	
			11/14/18	193 ^(d)	
	90	1,1-Dichloroethene	11/16/11	36	7
			02/24/12	19	
			05/31/12	16.7	
			08/30/12	12.6	
			12/06/12	10.1	
			02/19/13	11.1	
			05/23/13	11.2	
			08/20/13	10.8	
			11/21/13	10	
			02/19/14	9.4	
			05/28/14	2.7	
			08/17/14	8.4	
			11/13/14	7.2	
			02/26/15	10.1	
			05/28/15	11.0*	

TABLE III
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 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3	90	'1,1-Dichloroethene	08/28/15	10.8	7
			11/19/15	12.0	
			02/23/16	11.0	
			05/25/16	15.2	
			08/24/16	18.3	
			11/16/16	22.0	
			02/22/17	21.3	
			05/24/17	26.4	
			08/30/17	23.0	
			11/15/17	22.1	
			02/28/18	26.3	
			03/15/18	20.6 ⁽⁸⁾	
			05/30/18	21.6	
			08/22/18	29.5	
			11/14/18	32.3	
		Tetrachloroethene	11/16/11	ND (<1.0)	5
			02/24/12	ND (<1.0)	
			05/31/12	ND (<1.3)	
			08/30/12	ND (<1.0)	
			12/06/12	ND (<1.0)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<1.0)	
			02/19/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/17/14	ND (<2.5)	
			11/13/14	ND (<1.0)	
			02/26/15	ND (<0.50)	
			05/28/15	ND (<0.50)*	
			08/28/15	ND (<0.50)	
			11/19/15	ND (<1.0)	
			02/23/16	ND (<1.0)	
			05/25/16	ND (<0.50)	
			08/24/16	ND (<0.50)	
			11/16/16	ND (<0.50)	
			02/22/17	ND (<0.50)	
			05/24/17	ND (<0.50)	
			08/30/17	0.14 (J)	
			11/15/17	ND (<0.50)	
			02/28/18	ND (<0.50)	
			03/15/18	ND (<0.30) ⁽⁶⁾	
			05/30/18	ND (<0.50)	
			08/22/18	ND (<1.0)	
			11/14/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3	90	1,4-Dioxane	11/16/11	12	N/A
			02/24/12	16	
			05/31/12	9.0	
			08/30/12	6.3	
			12/06/12	7.0	
			02/19/13	5.7	
			05/23/13	5.0	
			08/20/13	5.1	
			11/21/13	4.8	
			02/19/14	4.6	
			05/28/14	4.1	
			08/17/14	5.2	
			11/13/14	3.4	
			02/26/15	3.7	
			05/28/15	3.8*	
			08/28/15	4.7	
			11/19/15	3.7	
			02/23/16	5.9	
			05/25/16	7.1	
			08/24/16	8.5	
			11/16/16	8.4	
			02/22/17	10.1	
			05/24/17	10.7	
			08/30/17	9.9	
			11/15/17	10.6	
			02/28/18	11.2	
			03/15/18	6.6 ⁽⁸⁾	
			05/30/18	11.0	
			08/22/18	11.1	
			11/14/18	9.5	
PT-3D	126	Trichloroethene	04/26/12	ND (<0.50)	5
			05/31/12	ND (<0.50)	
			08/30/12	ND (<0.50)	
			12/06/12	ND (<0.50)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<0.50)	
			02/19/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/17/14	ND (<0.50)	
			11/13/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/26/15	0.64	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3D	126	Trichloroethene	11/17/15	1.1	5
			02/23/16	1.1	
			05/25/16	1.0	
			08/24/16	1.1	
			11/16/16	0.95	
			02/22/17	1.1	
			05/24/17	1.8	
			08/30/17	1.3	
			11/15/17	0.67	
			02/28/18	1.7	
			05/30/18	1.8	
			08/22/18	0.46 (J)	
			11/14/18	ND (<1.0)	
		1,1-Dichloroethene	04/26/12	ND (<0.50)	7
			05/31/12	ND (<0.50)	
			08/30/12	ND (<0.50)	
			12/06/12	ND (<0.50)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<0.50)	
			02/19/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/17/14	ND (<0.50)	
			11/13/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/25/16	ND (<0.50)	
			08/24/16	ND (<0.50)	
			11/16/16	ND (<0.50)	
			02/22/17	ND (<0.50)	
			05/24/17	ND (<0.50)	
			08/30/17	0.14 (J)	
			11/15/17	ND (<0.50)	
			02/28/18	ND (<0.50)	
			05/30/18	ND (<0.50)	
			08/22/18	ND (<1.0)	
			11/14/18	ND (<1.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3D	135	Tetrachloroethene	04/26/12	ND (<0.50)	5
			05/31/12	ND (<0.50)	
			08/30/12	ND (<0.50)	
			12/06/12	ND (<0.50)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<0.50)	
			02/19/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/17/14	ND (<0.50)	
			11/13/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/25/16	ND (<0.50)	
			08/24/16	ND (<0.50)	
			11/16/16	ND (<0.50)	
			02/22/17	ND (<0.50)	
			05/24/17	ND (<0.50)	
			08/30/17	ND (<0.50)	
			11/15/17	ND (<0.50)	
			02/28/18	ND (<0.50)	
			05/30/18	ND (<0.50)	
			08/22/18	ND (<1.0)	
			11/14/18	ND (<1.0)	
	135	1,4-Dioxane	04/26/12	ND (<2.0)	N/A
			05/31/12	ND (<2.0)	
			08/30/12	ND (<2.0)	
			12/06/12	0.64 (J)	
			02/19/13	ND (<2.0)	
			05/23/13	ND (<2.0)	
			08/20/13	ND (<2.0)	
			11/21/13	ND (<2.0)	
			02/19/14	ND (<2.0)	
			05/28/14	ND (<2.0)	
			08/17/14	ND (<2.0)	
			11/13/14	ND (<2.0)	
			02/26/15	ND (<2.0)	
			05/27/15	ND (<2.0)	
			08/26/15	ND (<2.0)	
			11/17/15	ND (<2.0)	
			02/23/16	ND (<2.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-3D	135	1,4-Dioxane	05/25/16	0.72 (J)	N/A
			08/24/16	1.6 (J)	
			11/16/16	ND (<2.0)	
			02/22/17	ND (<1.0)	
			05/24/17	0.86 (J)	
			08/30/17	ND (<1.0)	
			11/15/17	ND (<1.0)	
			02/28/18	ND (<1.0)	
			05/30/18	ND (<1.0)	
			08/22/18	ND (<1.0)	
			11/14/18	0.37 (J)	
PT-4	90	Trichloroethene	11/16/11	44	5
			02/24/12	53	
			05/31/12	57.2	
			08/30/12	48.5	
			12/06/12	39.2	
			02/19/13	49	
			05/23/13	43.3	
			08/20/13	38.9	
			11/21/13	40.4	
			02/17/14	35.8	
			05/28/14	14.7	
			08/19/14	43.6	
			11/12/14	45.5	
			02/26/15	28.0	
			05/26/15	36.2	
			08/26/15	32.0	
			11/17/15	31.0	
			02/24/16	21.5	
			05/24/16	27.8	
			08/23/16	49.1	
			11/15/16	35.3	
			02/21/17	38.1	
			05/23/17	33.6	
			08/29/17	41.3	
			11/14/17	48.9	
			02/27/18	38.4	
			05/29/18	51.2	
			08/21/18	58.1	
			11/13/18	47.7	
	90	1,1-Dichloroethene	11/16/11	2.8	7
			02/24/12	8.7	
			05/31/12	8.0	
			08/30/12	7.4	
			12/06/12	5.9	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-4	90	'1,1-Dichloroethene	02/19/13	5.6	7
			05/23/13	5.6	
			08/20/13	5.4	
			11/21/13	5.6	
			02/17/14	4.3	
			05/28/14	0.60	
			08/19/14	5.5	
			11/12/14	6.0	
			02/26/15	3.8	
			05/26/15	5.0	
			08/26/15	4.2	
			11/17/15	3.9 ^(b)	
			02/24/16	3.5	
			05/24/16	4.0	
			08/23/16	7.9	
			11/15/16	5.0	
			02/21/17	5.3	
			05/23/17	7.8	
			08/29/17	6.0	
			11/14/17	7.2	
			02/27/18	6.1	
			05/29/18	7.6	
			08/21/18	6.4	
			11/13/18	5.6	
		Tetrachloroethene	11/16/11	ND (<1.0)	5
			02/24/12	ND (<1.0)	
			05/31/12	ND (<0.50)	
			08/30/12	ND (<0.50)	
			12/06/12	ND (<0.50)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/24/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-4	90	'Tetrachloroethene	02/21/17	ND (<0.50)	5
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		1,4-Dioxane	11/16/11	4.3	N/A
			02/24/12	5.3	
			05/31/12	3.4	
			08/30/12	2.8	
			12/06/12	2.6	
			02/19/13	3.1	
			05/23/13	2.4	
			08/20/13	2.8	
			11/21/13	2.9	
			02/17/14	1.9 (J)	
			05/28/14	2.1	
			08/19/14	2.9	
			11/12/14	2.4	
			02/26/15	1.9 (J)	
			05/26/15	1.7 (J)	
			08/26/15	2.1	
			11/17/15	1.1 (J)	
			02/24/16	1.6 (J)	
			05/24/16	1.5 (J)	
			08/23/16	2.4	
			11/15/16	1.4	
			02/21/17	1.7	
			05/23/17	1.7	
			08/29/17	1.9	
			11/14/17	2.3	
			02/27/18	2.4	
			05/29/18	2.5	
			08/21/18	2.7	
			11/13/18	2.3	
PT-4D	126	Trichloroethene	04/26/12	3.8	5
			05/31/12	3.9	
			08/30/12	3.7	
			12/06/12	2.3	
			02/19/13	1.7	
			05/23/13	1.3	
			08/20/13	1.2	
			11/21/13	1.1	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-4D	126	Trichloroethene	02/17/14	0.83	5
			05/28/14	0.61	
			08/19/14	0.49 (J)	
			11/12/14	0.69	
			02/26/15	0.67	
			05/26/15	0.48 (J)	
			08/26/15	0.49 (J)	
			11/17/15	0.65	
			02/23/16	0.88	
			05/24/16	0.98	
			08/23/16	1.7	
			11/15/16	1.4	
			02/21/17	1.1	
			05/23/17	0.94	
			08/29/17	0.67	
			11/14/17	1.5	
			02/17/18	1.1	
			05/29/18	0.77	
			08/21/18	0.68 (J)	
			11/13/18	ND (<1.0)	
	126	1,1-Dichloroethene	04/26/12	0.58	7
			05/31/12	0.55	
			08/30/12	0.69	
			12/06/12	ND (<0.50)	
			02/19/13	0.27 (J)	
			05/23/13	0.20 (J)	
			08/20/13	0.21 (J)	
			11/21/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	0.16 (J)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	0.16 (J)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-4D	125	'1,1-Dichloroethene	05/29/18	ND (<0.50)	7
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		Tetrachloroethene	04/26/12	ND (<0.50)	5
			05/31/12	ND (<0.50)	
			08/30/12	ND (<0.50)	
			12/06/12	ND (<0.50)	
			02/19/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/21/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/28/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/26/15	ND (<0.50)	
			05/26/15	ND (<0.50)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		1,4-Dioxane	04/26/12	ND (<2.0)	N/A
			05/31/12	ND (<2.0)	
			08/30/12	ND (<2.0)	
			12/06/12	ND (<2.0)	
			02/19/13	ND (<2.0)	
			05/23/13	ND (<2.0)	
			08/20/13	ND (<2.0)	
			11/21/13	ND (<2.0)	
			02/17/14	ND (<2.0)	
			05/28/14	ND (<2.0)	
			08/19/14	ND (<2.0)	
			11/12/14	ND (<2.0)	
			02/26/15	ND (<2.0)	
			05/26/15	ND (<2.0)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-4D	125	1,4-Dioxane	08/26/15	ND (<2.0)	N/A
			11/17/15	ND (<2.0)	
			02/23/16	ND (<2.0)	
			05/24/16	ND (<2.0)	
			08/23/16	1.6 (J)	
			11/15/16	ND (<2.0)	
			02/21/17	ND (<1.0)	
			05/23/17	ND (<1.0)	
			08/29/17	ND (<1.0)	
			11/14/17	0.48 (J)	
			02/27/18	ND (<1.0)	
			05/29/18	ND (<1.0)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
PT-5	90	Trichloroethene	11/15/11	11	5
			02/24/12	9.0	
			05/30/12	9.0	
			08/29/12	10.4	
			12/05/12	8.7	
			02/18/13	8.1	
			05/23/13	5.0	
			08/20/13	3.6	
			11/20/13	3.1	
			02/17/14	2.5	
			05/27/14	2.1	
			08/19/14	1.3	
			11/12/14	1.8	
			02/23/15	1.7	
			05/26/15	1.2	
			08/26/15	0.86	
			11/17/15	1.3	
			02/23/16	1.3	
			05/24/16	1.3	
			08/23/16	2.7	
			11/15/16	2.3	
			02/21/17	1.8	
			05/23/17	1.4	
			08/29/17	1.5	
			11/14/17	2.0	
			02/27/18	2.0	
			05/29/18	1.8	
			08/21/18	1.8	
			11/13/18	1.5	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-5	90	1,1-Dichloroethene	11/15/11	ND (<2.0)	7
			02/24/12	ND (<2.0)	
			05/30/12	0.59	
			08/29/12	1.1	
			12/05/12	1.2	
			02/18/13	1.1	
			05/23/13	0.70	
			08/20/13	0.58	
			11/20/13	0.42 (J)	
			02/17/14	0.33 (J)	
			05/27/14	0.31 (J)	
			08/19/14	ND (<0.50)	
			11/12/14	0.26 (J)	
			02/23/15	0.24 (J)	
			05/26/15	0.23 (J)	
			08/26/15	ND (<0.50)	
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	0.29 (J)	
			02/21/17	ND (<0.50)	
			05/23/17	0.31 (J)	
			08/29/17	0.24 (J)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		Tetrachloroethene	11/15/11	ND (<1.0)	5
			02/24/12	ND (<1.0)	
			05/30/12	ND (<0.50)	
			08/29/12	ND (<0.50)	
			12/05/12	ND (<0.50)	
			02/18/13	ND (<0.50)	
			05/23/13	ND (<0.50)	
			08/20/13	ND (<0.50)	
			11/20/13	ND (<0.50)	
			02/17/14	ND (<0.50)	
			05/27/14	ND (<0.50)	
			08/19/14	ND (<0.50)	
			11/12/14	ND (<0.50)	
			02/23/15	ND (<0.50)	
			05/26/15	ND (<0.50)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
PT-5	90	Tetrachloroethene	08/26/15	ND (<0.50)	5
			11/17/15	ND (<0.50)	
			02/23/16	ND (<0.50)	
			05/24/16	ND (<0.50)	
			08/23/16	ND (<0.50)	
			11/15/16	ND (<0.50)	
			02/21/17	ND (<0.50)	
			05/23/17	ND (<0.50)	
			08/29/17	ND (<0.50)	
			11/14/17	ND (<0.50)	
			02/27/18	ND (<0.50)	
			05/29/18	ND (<0.50)	
			08/21/18	ND (<1.0)	
			11/13/18	ND (<1.0)	
		1,4-Dioxane	11/15/11	ND (<2.0)	N/A
			02/24/12	ND (<2.0)	
			05/30/12	ND (<2.0)	
			08/29/12	ND (<2.0)	
			12/05/12	1.2 (J)	
			02/18/13	ND (<2.0)	
			05/23/13	ND (<2.0)	
			08/20/13	ND (<2.0)	
			11/20/13	ND (<2.0)	
			02/17/14	ND (<2.0)	
			05/27/14	ND (<2.0)	
			08/19/14	ND (<2.0)	
			11/12/14	ND (<2.0)	
			02/23/15	ND (<2.0)	
			05/26/15	ND (<2.0)	
			08/26/15	ND (<2.0)	
			11/17/15	ND (<2.0)	
			02/23/16	ND (<2.0)	
			05/24/16	ND (<2.0)	
			08/23/16	1.4 (J)	
			11/15/16	ND (<2.0)	
			02/21/17	ND (<1.0)	
			05/23/17	ND (<1.0)	
			08/29/17	ND (<1.0)	
			11/14/17	0.49 (J)	
			02/27/18	ND (<1.0)	
			05/29/18	ND (<1.0)	
			08/21/18	ND (<1.0)	
			11/13/18	0.43 (J)	

TABLE III
PLYMOUTH TUBE GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Constituent	Sample Date	Concentration (µg/L)	MCL
Notes:					
Bold values indicate detects					
Red Highlighted values indicate detection exceeding MCL					
Blue Highlighted values indicate a detection but below MCL					
Detected 1,4-Dioxane value (N/A: No current MCL)					
⁽¹⁾ Groundwater sample collected 41 days after Limited Groundwater Pump & Treat (LGWP&T) System was shut off.					
⁽²⁾ The LGWP&T System was shut down for 30 days from 7/17/13 through 8/15/13 for maintenance. The monitor well was					
⁽³⁾ The LGWP&T Sytem was shut down for 7 days from 8/12/14 through 8/18/14 possibly due to a storm event. The					
⁽⁴⁾ Pump was non-operable at time of sampling event and was replaced on 5 March 2015					
⁽⁵⁾ Result is from Run #2 of analysis.					
⁽⁶⁾ Result is from Run #3 of analysis.					
⁽⁷⁾ Result is from resample after previous quarterly sampling event.					
⁽⁸⁾ Result is from sampling during ISCO +6 month sampling event.					
Pumps in wells LB-7R and PT-2S were removed on May 19, 2015					
* Data presented were collected as part of vertical profiling sampling event. Data from wells PT-1S and PT-3 were collected at 90 feet btoc. Data from wells LB-7R and PT-2S were collected at 85 and 95 feet btoc, respectively.					
** The detection limit for PCE exceeds the MCL of 5 µg/L. Based on historic concentrations, it is likely that PCE is present at this well.					
Abbreviations:					
< = Less than, analyte not detected at concentrations greater than the reporting limit shown					
µg/L = micrograms per liter					
feet btoc = feet below top of the casing					
ID = Identification					
ISCO = In-Situ Chemical Oxidation					
J = Concentration estimated. Analyte was detected below laboratory minimum reporting limit.					
M1 = Matrix spike recovery was high; the associated blank spike recovery was acceptable.					
MCL = EPA Maximum Contaminant Level					
NA = not applicable					
ND= Analyte Not Detected at or above the reporting limit					
NS= Not Sampled					
PCE = tetrachloroethylene					

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-1	88	Trichloroethene	05/22/13	36.4	5
			11/20/13	33.9	
			02/18/14	23.1	
			08/18/14	25.1	
			11/11/14	21.6	
			02/25/15	22.7	
			05/27/15	18.0	
			08/27/15	18.5	
			11/18/15	17.9	
			02/25/16	14.0	
			05/26/16	15.3	
			08/25/16	17.3	
			11/17/16	16.6	
			02/23/17	18.0	
			05/25/17	16.6	
			08/31/17	17.8	
			11/16/17	18.9	
			03/01/18	21.4	
			05/31/18	20.3	
			08/23/18	22.0	
			11/15/18	21.1	
		1,1-Dichloroethene	05/22/13	4.4	7
			11/20/13	4.62	
			02/18/14	2.8	
			08/18/14	1.4	
			11/11/14	2.4	
			02/25/15	1.9	
			05/27/15	2.2	
			08/27/15	2.2	
			11/18/15	2.4	
			02/25/16	1.3	
			05/26/16	2.1	
			08/25/16	1.4	
			11/17/16	2.4	
			02/23/17	2.2	
			05/25/17	2.1	
			08/31/17	1.2	
			11/16/17	1.5	
			03/01/18	2.4	
			05/31/18	1.6	
			08/23/18	ND (<1.0)	
			11/15/18	ND (<1.0)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-1	88	Tetrachloroethene	05/22/13	ND (<0.50)	5
			11/20/13	ND (<0.50)	
			02/18/14	ND (<0.50)	
			08/18/14	ND (<0.50)	
			11/11/14	ND (<0.50)	
			02/25/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/27/15	ND (<0.50)	
			11/18/15	ND (<0.50)	
			02/25/16	ND (<0.50)	
			05/26/16	ND (<0.50)	
			08/25/16	ND (<0.50)	
			11/17/16	ND (<0.50)	
			02/23/17	ND (<0.50)	
			05/25/17	ND (<0.50)	
			08/31/17	ND (<0.50)	
			11/16/17	ND (<0.50)	
			03/01/18	ND (<0.50)	
			05/31/18	ND (<0.50)	
			08/23/18	ND (<1.0)	
			11/15/18	ND (<1.0)	
		1,4-Dioxane	05/22/13	2.4	N/A
			11/20/13	NS	
			02/18/14	1.8 (J)	
			08/18/14	2.0	
			11/11/14	1.6 (J)	
			02/25/15	1.8 (J)	
			05/27/15	1.3 (J)	
			08/27/15	ND (<2.0)	
			11/18/15	0.89 (J)	
			02/25/16	0.97 (J)	
			05/26/16	0.81 (J)	
			08/25/16	1.7 (J)	
			11/17/16	0.81 (J)	
			02/23/17	0.89 (J)	
			05/25/17	1.4	
			08/31/17	0.83 (J)	
			11/16/17	1.1	
			03/01/18	1.1	
			05/31/18	1.2	
			08/23/18	1.2	
			11/15/18	1.3	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-13	124	Trichloroethene	05/22/13	12.5	5
			11/20/13	17.5	
			02/18/14	13.0	
			08/18/14	15.3	
			11/11/14	10.8	
			02/25/15	10.0	
			05/27/15	9.7	
			08/27/15	9.4	
			11/18/15	8.1	
			02/25/16	6.6	
			05/26/16	5.6	
			08/25/16	6.9	
			11/17/16	5	
			02/23/17	5.0	
			05/25/17	5.2	
			08/31/17	4.4	
			11/16/17	3.4	
			03/01/18	2.9	
			05/31/18	3.7	
			08/23/18	3.9	
			11/15/18	3.3	
		1,1-Dichloroethene	05/22/13	2.3	7
			11/20/13	1.77	
			02/18/14	2.2	
			08/18/14	2.2	
			11/11/14	1.8	
			02/25/15	1.8	
			05/27/15	1.8	
			08/27/15	1.6	
			11/18/15	1.6	
			02/25/16	0.99	
			05/26/16	1.1	
			08/25/16	0.44 (J)	
			11/17/16	0.98	
			02/23/17	0.84	
			05/25/17	0.81	
			08/31/17	0.83	
			11/16/17	0.60	
			03/01/18	0.60	
			05/31/18	0.72	
			08/23/18	0.80 (J)	
			11/15/18	0.54 (J)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-13	124	Tetrachloroethene	05/22/13	ND (<0.50)	5
			11/20/13	ND (<0.50)	
			02/18/14	ND (<0.50)	
			08/18/14	ND (<0.50)	
			11/11/14	ND (<0.50)	
			02/25/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/27/15	ND (<0.50)	
			11/18/15	ND (<0.50)	
			02/25/16	ND (<0.50)	
			05/26/16	ND (<0.50)	
			08/25/16	ND (<0.50)	
			11/17/16	ND (<0.50)	
			02/23/17	ND (<0.50)	
			05/25/17	ND (<0.50)	
			08/31/17	ND (<0.50)	
			11/16/17	ND (<0.50)	
			03/01/18	ND (<0.50)	
			05/31/18	ND (<0.50)	
			08/23/18	ND (<1.0)	
			11/15/18	ND (<1.0)	
		1,4-Dioxane	05/22/13	1.5 (J)	N/A
			11/20/13	NS	
			02/18/14	1.1 (J)	
			08/18/14	1.4 (J)	
			11/11/14	1.2 (J)	
			02/25/15	1.1(J)	
			05/27/15	1.1(J)	
			08/27/15	1.1(J)	
			11/18/15	ND (<2.0)	
			02/25/16	0.74 (J)	
			05/26/16	0.53 (J)	
			08/25/16	2.3	
			11/17/16	0.45 (J)	
			02/23/17	0.51 (J)	
			05/25/17	ND (<1.0)	
			08/31/17	0.41 (J)	
			11/16/17	0.37 (J)	
			03/01/18	0.45 (J)	
			05/31/18	0.31 (J)	
			08/23/18	0.43 (J)	
			11/15/18	0.58 (J)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-17	138	Trichloroethene	05/22/13	9.2	5
			11/20/13	10.8	
			02/18/14	8.2	
			08/18/14	9.0	
			11/11/14	7.9	
			02/25/15	7.5	
			05/27/15	7.0	
			08/27/15	6.3	
			11/18/15	5.6	
			02/25/16	4.1	
			05/26/16	3.3	
			08/25/16	4.6	
			11/17/16	3.4	
			02/23/17	2.9	
			05/25/17	2.7	
			08/31/17	2.5	
			11/16/17	2.0	
			03/01/18	2.2	
			05/13/18	2.6	
			08/23/18	2.3	
			11/15/18	2.1	
		1,1-Dichloroethene	05/22/13	2.3	7
			11/20/13	1.08	
			02/18/14	2.0	
			08/18/14	2.1	
			11/11/14	2.3	
			02/25/15	2.1	
			05/27/15	1.9	
			08/27/15	1.6	
			11/18/15	1.7	
			02/25/16	1.3	
			05/26/16	1.4	
			08/25/16	1.6	
			11/17/16	1.4	
			02/23/17	1.1	
			05/25/17	0.91	
			08/31/17	0.95	
			11/16/17	0.73	
			03/01/18	0.80	
			05/31/18	0.85	
			08/23/18	0.93 (J)	
			11/15/18	0.73 (J)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
LB-17	138	Tetrachloroethene	05/22/13	1.2	5
			11/20/13	2.57	
			02/18/14	1.7	
			08/18/14	1.7	
			11/11/14	1.3	
			02/25/15	2.2	
			05/27/15	1.4	
			08/27/15	1.7	
			11/18/15	1.3	
			02/25/16	0.9	
			05/26/16	0.77	
			08/25/16	1.3	
			11/17/16	0.97	
			02/23/17	0.88	
			05/25/17	0.75	
			08/31/17	0.56	
			11/16/17	0.49 (J)	
			03/01/18	0.54	
			05/31/18	0.78	
			08/23/18	0.50 (J)	
			11/15/18	0.50 (J)	
		1,4-Dioxane	05/22/13	0.98 (J)	N/A
			11/20/13	NS	
			02/18/14	0.73 (J)	
			08/18/14	1.2 (J)	
			11/11/14	ND (<2.0)	
			02/25/15	ND (<2.0)	
			05/27/15	0.67 (J)	
			08/27/15	ND (<2.0)	
			08/27/15	ND (<2.0)	
			02/25/16	0.55 (J)	
			05/26/16	ND (<2.0)	
			08/25/16	1.6 (J)	
			11/17/16	ND (<2.0)	
			02/23/17	0.38 (J)	
			05/25/17	ND (<1.0)	
			08/31/17	ND (<1.0)	
			11/16/17	0.30 (J)	
			03/01/18	0.32 (J)	
			05/31/18	ND (<1.0)	
			08/23/18	ND (<1.0)	
			11/15/18	0.42 (J)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
PT-6D	165	Trichloroethene	11/11/14	12.3	5
			02/25/15	5.6	
			05/27/15	5.3	
			08/27/15	4.4	
			11/18/15	3.4	
			02/25/16	3.3	
			05/26/16	2.6	
			08/25/16	3.6	
			11/17/16	2.6	
			02/23/17	2.2	
			05/25/17	2.1	
			08/31/17	1.8	
			11/16/17	1.4	
			03/01/18	1.4	
			05/31/18	1.4	
			08/23/18	1.6	
			11/15/18	1.3	
	165	1,1-Dichloroethene	11/11/14	1.8	7
			02/25/15	1.0	
			05/27/15	1.0	
			08/27/15	0.49 (J)	
			11/18/15	0.80	
			02/25/16	0.76	
			05/26/16	0.61	
			08/25/16	0.73	
			11/17/16	0.60	
			02/23/17	0.44 (J)	
			05/25/17	0.37 (J)	
			08/31/17	0.37 (J)	
			11/16/17	0.32 (J)	
			03/01/18	0.32 (J)	
			05/31/18	0.34 (J)	
			08/23/18	0.39 (J)	
			11/15/18	ND (<1.0)	

TABLE IV
SELECTED GILA RIVER INDIAN COMMUNITY GROUNDWATER QUALITY
 FORMER PLYMOUTH TUBE COMPANY
 CHANDLER, ARIZONA

Monitor Well ID	Sample Depth (feet btoc)	Compounds	Sample Date	Results in micrograms per Liter (ug/L)	MCL
PT-6D	165	Tetrachloroethene	11/11/14	ND (<0.50)	5
			02/25/15	ND (<0.50)	
			05/27/15	ND (<0.50)	
			08/27/15	ND (<0.50)	
			11/18/15	ND (<0.50)	
			02/25/16	ND (<0.50)	
			05/26/16	ND (<0.50)	
			08/25/16	ND (<0.50)	
			11/17/16	ND (<0.50)	
			02/23/17	ND (<0.50)	
			05/25/17	ND (<0.50)	
			08/31/17	ND (<0.50)	
			11/16/17	ND (<0.50)	
			03/01/18	ND (<0.50)	
			05/31/18	ND (<0.50)	
			08/23/18	ND (<1.0)	
			11/15/18	ND (<1.0)	
	1,4-Dioxane	1,4-Dioxane	11/11/14	0.83 (J)	N/A
			02/25/15	ND (<2.0)	
			05/27/15	0.56 (J)	
			08/27/15	ND (<2.0)	
			11/18/15	ND (<2.0)	
			02/25/16	ND (<2.0)	
			05/26/16	ND (<2.0)	
			08/25/16	6.8	
			11/17/16	0.37 (J)	
			02/23/17	0.33 (J)	
			05/25/17	ND (<1.0)	
			08/31/17	ND (<1.0)	
			11/16/17	ND (<1.0)	
			03/01/18	0.37 (J)	
			05/31/18	0.33 (J)	
			08/23/18	ND (<1.0)	
			11/15/18	ND (<1.0)	

Notes:

Bold values indicate detects

Red Highlighted values indicate detection exceeding MCL

Blue Highlighted values indicate a detection but below MCL

Detected 1,4-Dioxane value (N/A: No current MCL)

Abbreviations:

< = Less than, analyte not detected at concentration greater than the reporting limit shown

feet btoc = feet below top of the casing

J= Concentration estimated. Analyte was detected below laboratory minimum reporting limit.

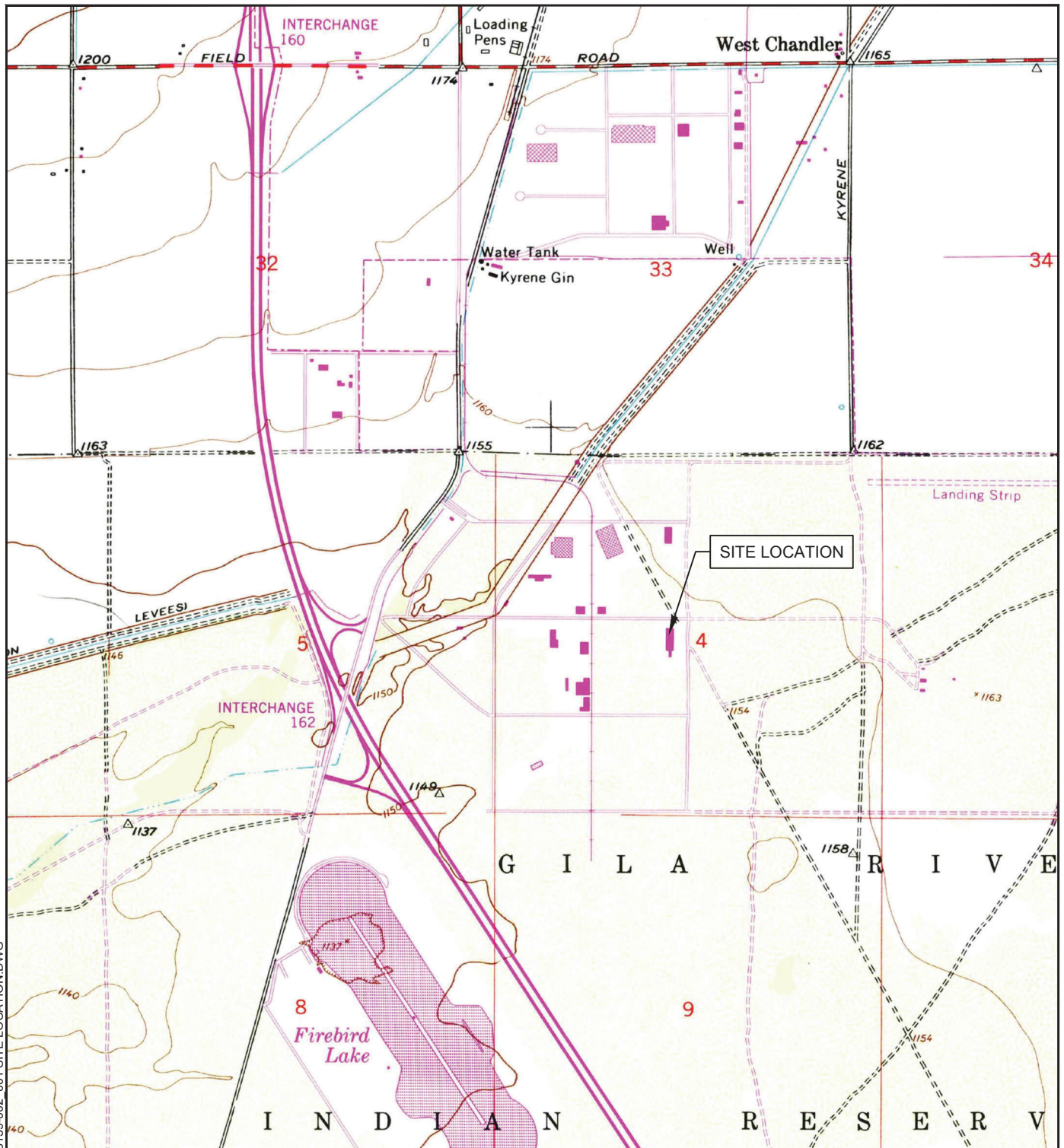
ID = Identification

MCL = EPA Maximum Contaminant Level

NS= Not Submitted for this compound

ND= Analyte Not Detected at or above the reporting limit

FIGURES



NOTES:

1. MAP SOURCE: USGS QUADRANGLE GUADALUPE, AZ
DATED 1952, REVISED 1982.



QUADRANGLE LOCATION



0 1000 2000
 APPROXIMATE SCALE IN FEET

**HALEY
 ALDRICH**

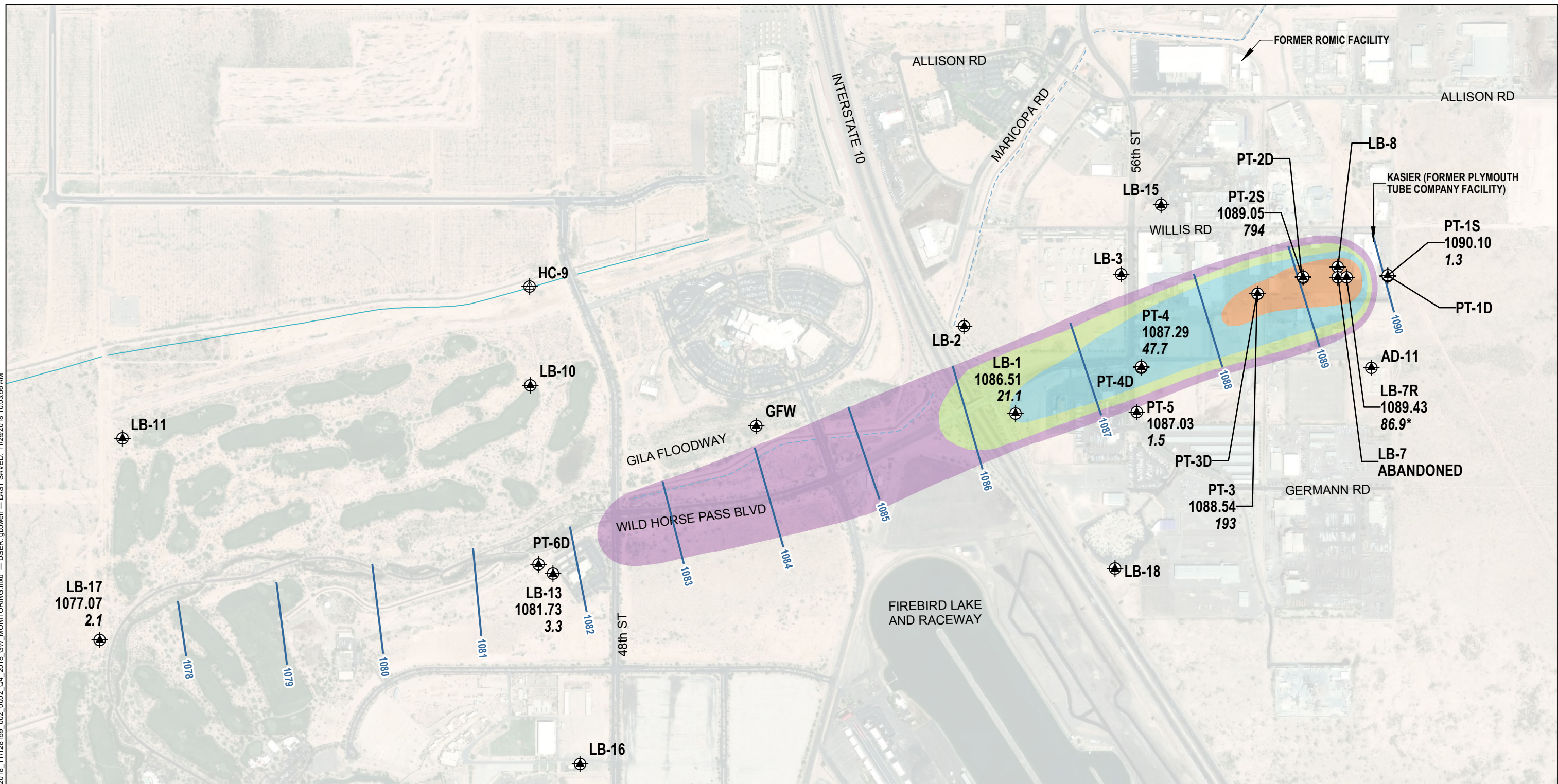
FORMER PLYMOUTH TUBE COMPANY
 6573 WEST WILLIS ROAD
 CHANDLER, ARIZONA

SITE LOCATION MAP

SCALE: AS SHOWN
 DECEMBER 2018

FIGURE 1

GIS FILE PATH: G:\Projects\Plymouth Tube\Global\GIS\Maps\2018_11128159_002_0002_Q4_2018_GW_MONITORING.mxd — USER: gbowen — LAST SAVED: 11/29/2018 10:03:56 AM



LEGEND

- MONITORING WELL
- AGRICULTURAL WELL
- GROUNDWATER ELEVATION CONTOUR, IN FEET ABOVE MEAN SEA LEVEL (AMSL)
- GILA DRAIN
- UNLINED IRRIGATION CANAL

TCE CONCENTRATION (µg/L)

- ≥ 5
- ≥ 10
- ≥ 20
- ≥ 100

NOTES

1. ALL LOCATION AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASUREMENT AND TCE CONCENTRATIONS IN SHALLOW GRIC MONITOR WELLS COLLECTED 15 NOVEMBER 2018.
3. GROUNDWATER ELEVATION MEASUREMENT AND TCE CONCENTRATIONS IN SHALLOW PLYMOUTH TUBE MONITOR WELLS COLLECTED 13 AND 14 NOVEMBER 2018.
4. µg/L = MICROGRAMS PER LITER
5. * = MONITOR WELL WAS AN ISCO INJECTION LOCATION
6. GRIC = GILA RIVER INDIAN COMMUNITY
7. NM = NOT MONITORED
8. AERIAL IMAGERY SOURCE: ESRI



0 1,000 2,000
SCALE IN FEET

HALEY
ALDRICH

FORMER PLYMOUTH TUBE COMPANY
6573 WEST WILLIS ROAD
CHANDLER, ARIZONA

4TH QUARTER 2018
GROUNDWATER MONITORING

DECEMBER 2018

FIGURE 2

Figure 3
Plymouth Tube Monitor Well Groundwater Elevations Hydrograph

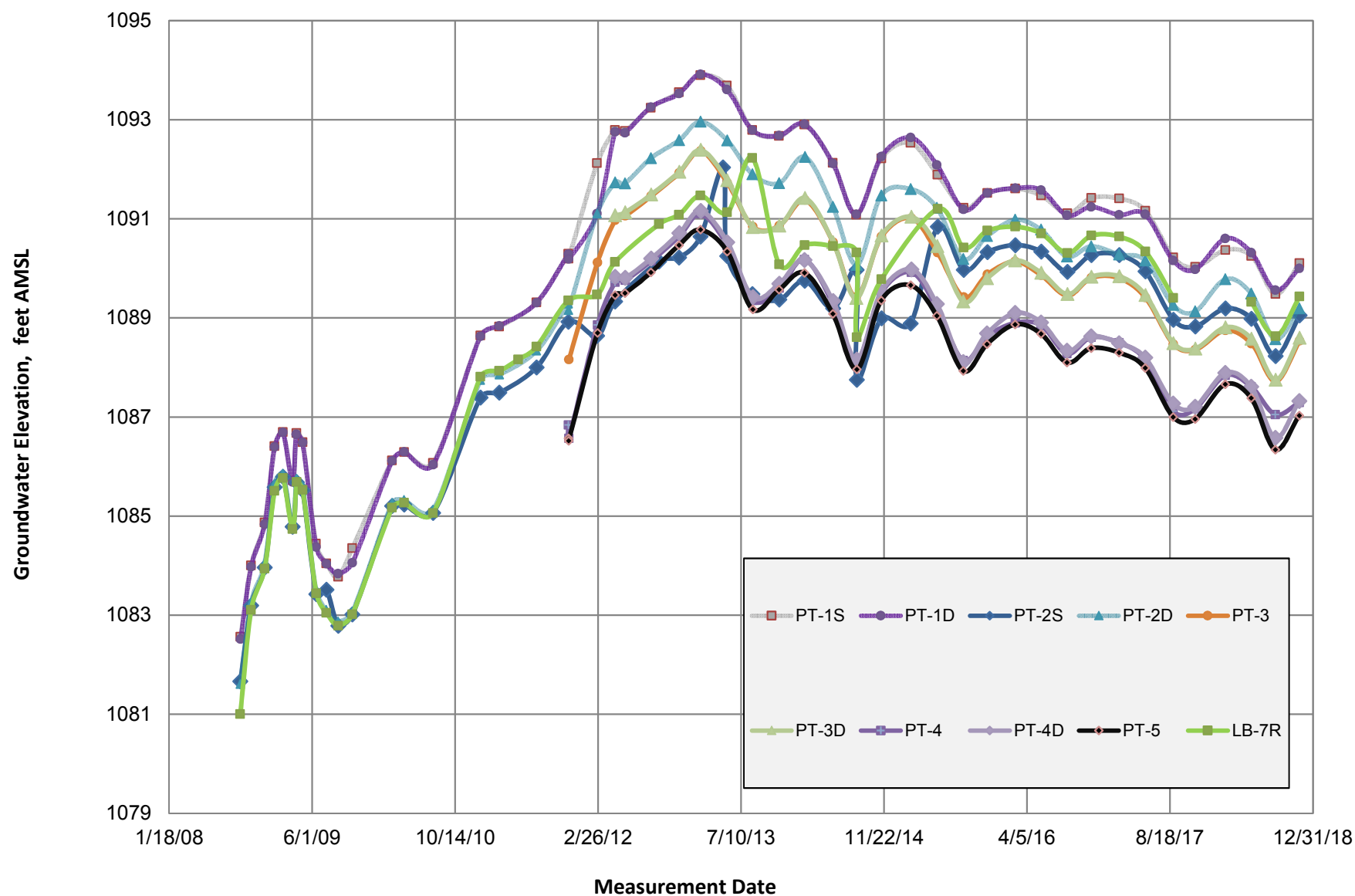


Figure 4
Monitor Well PT-1S Hydrograph

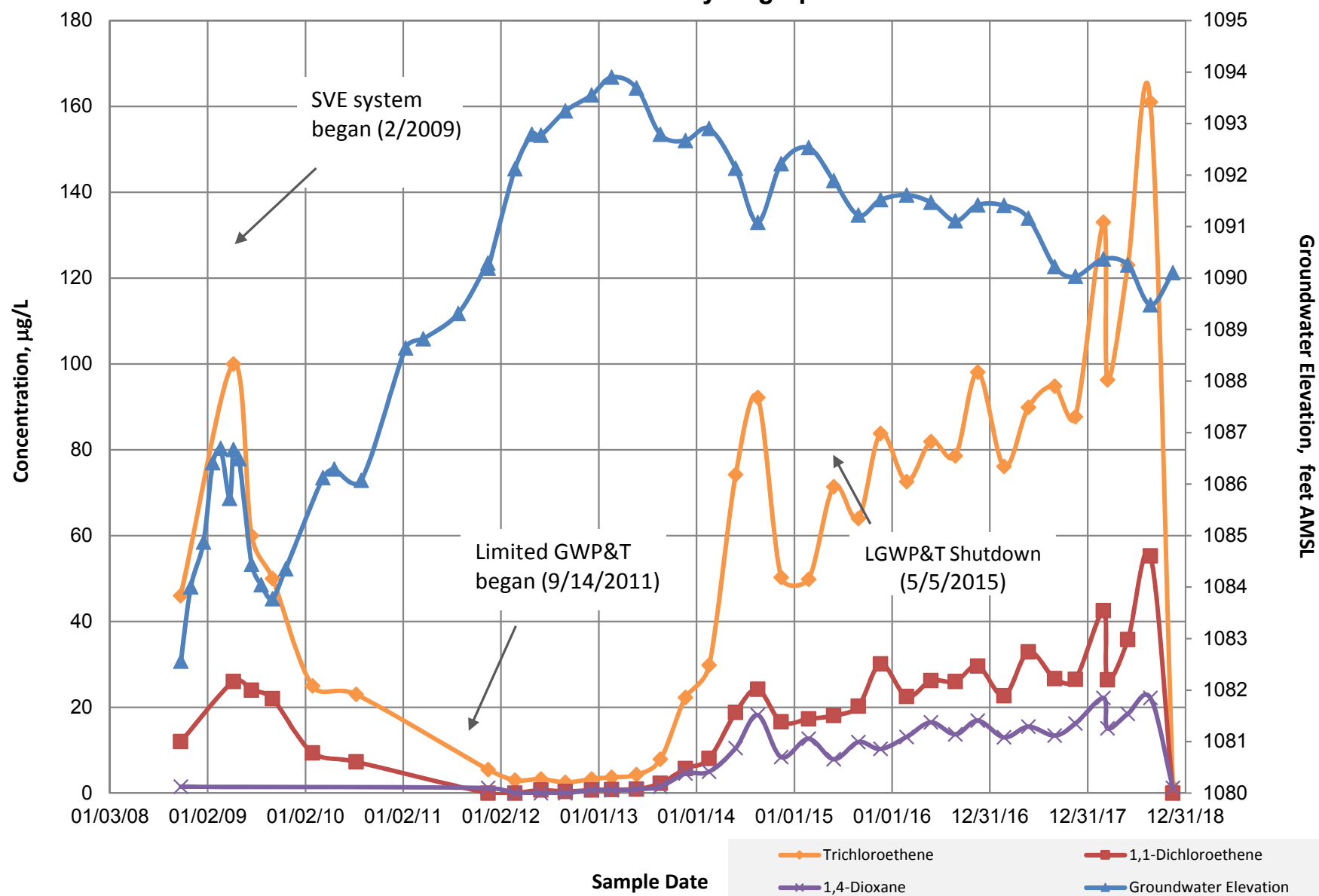


Figure 5
Monitor Well PT-1D Hydrograph

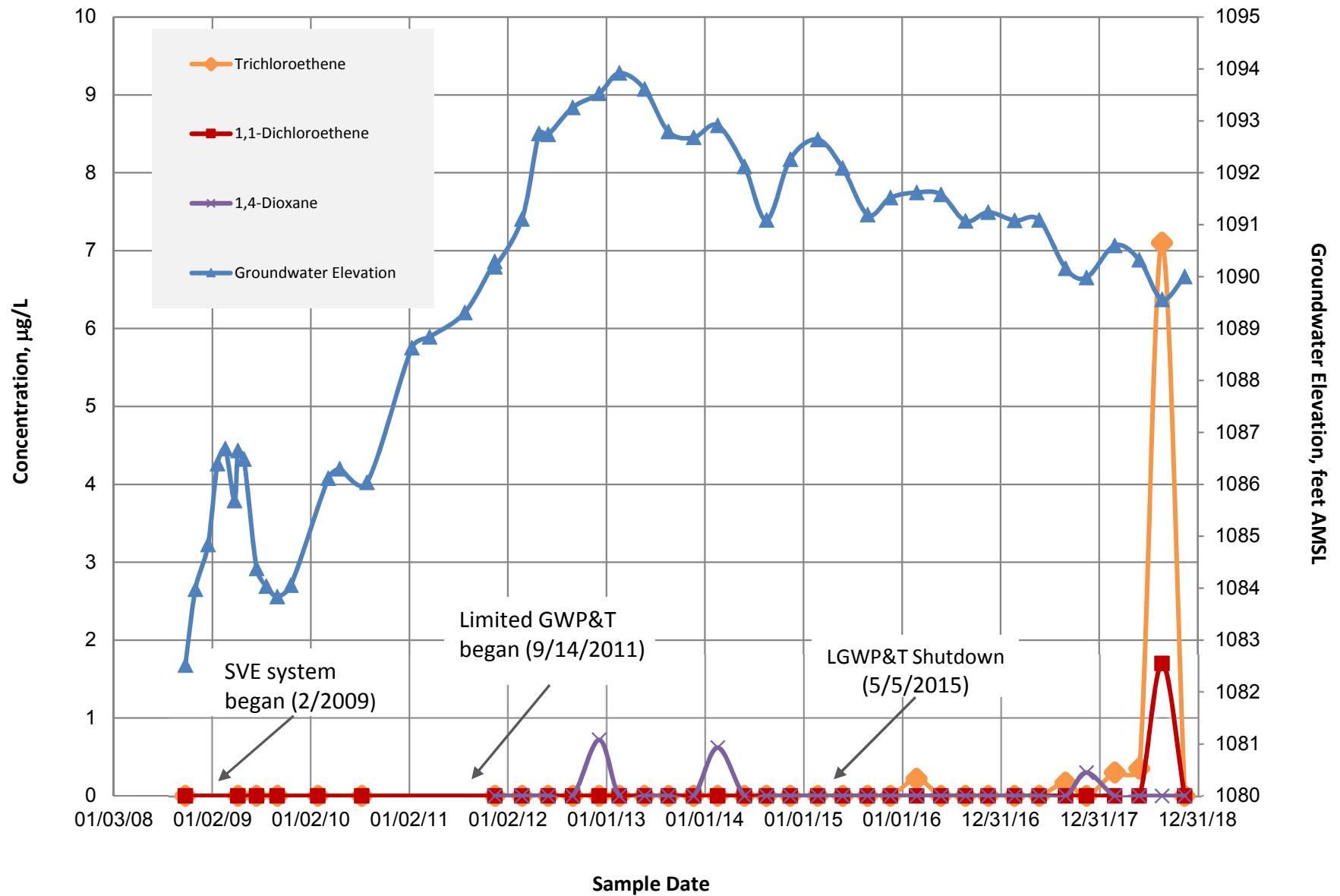


Figure 6
Monitor Well LB-7R Hydrograph

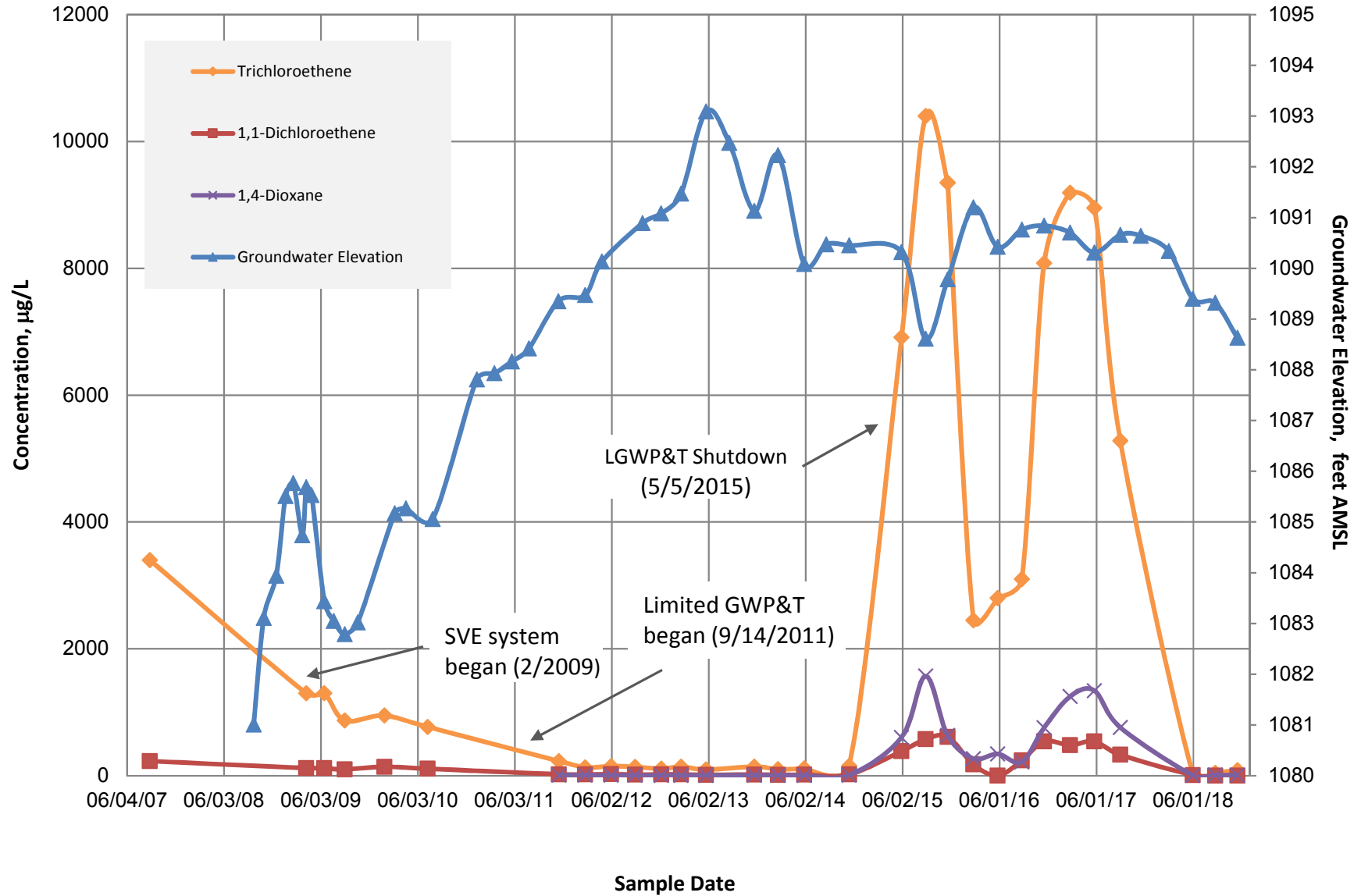


Figure 7
Monitor Well PT-2S Hydrograph

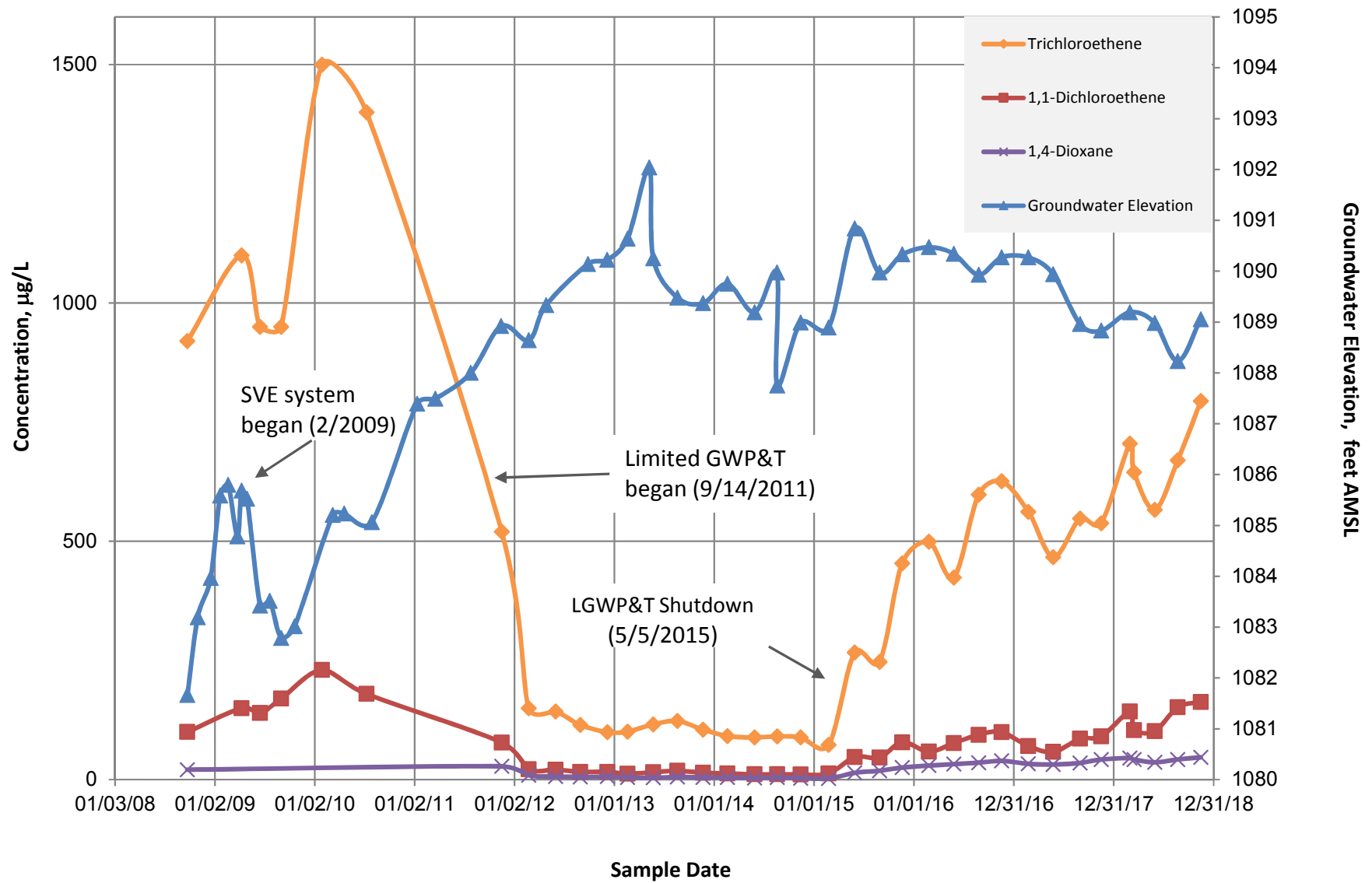


Figure 8
Monitor Well PT-2D Hydrograph

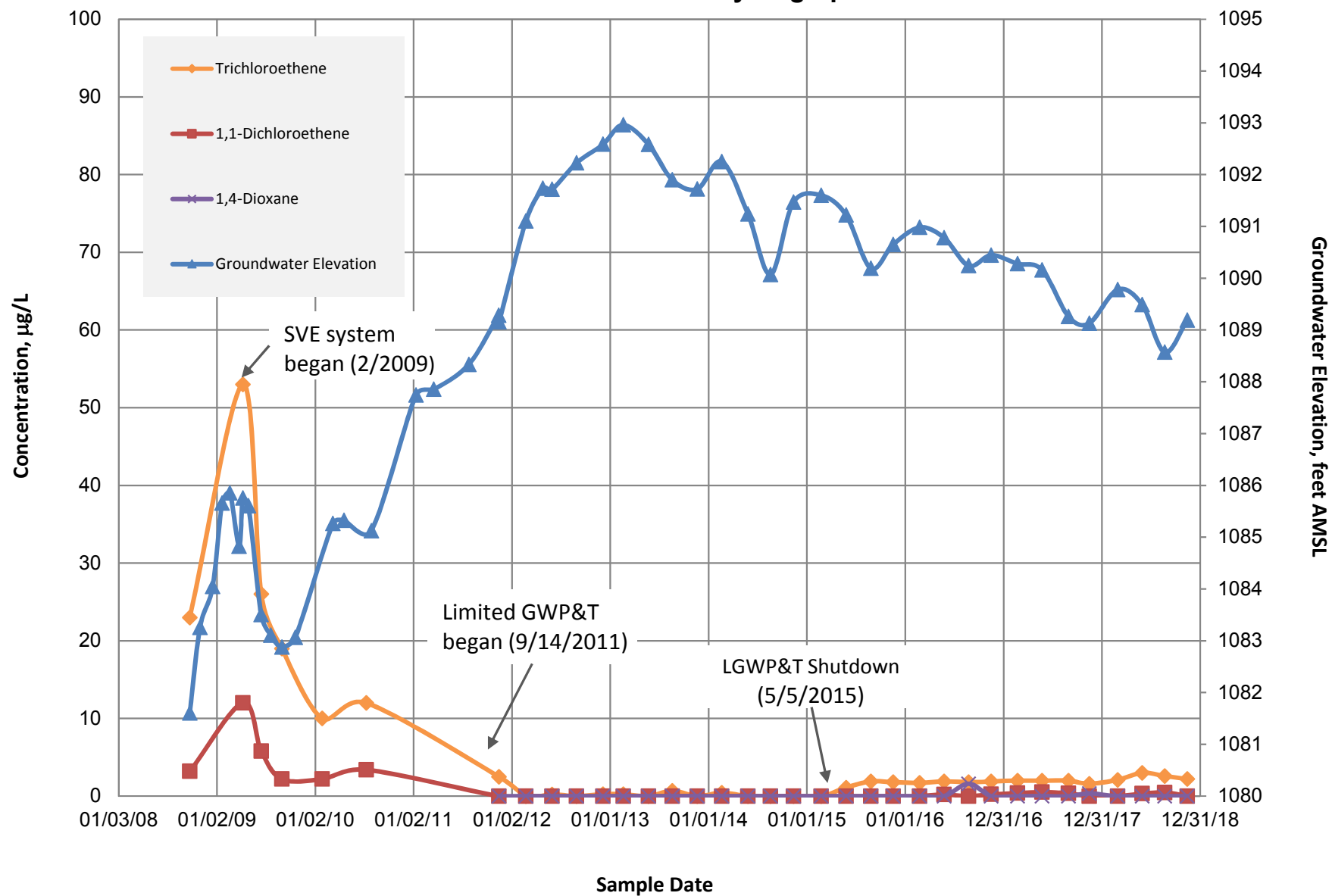


Figure 9
Monitor Well PT-3 Hydrograph

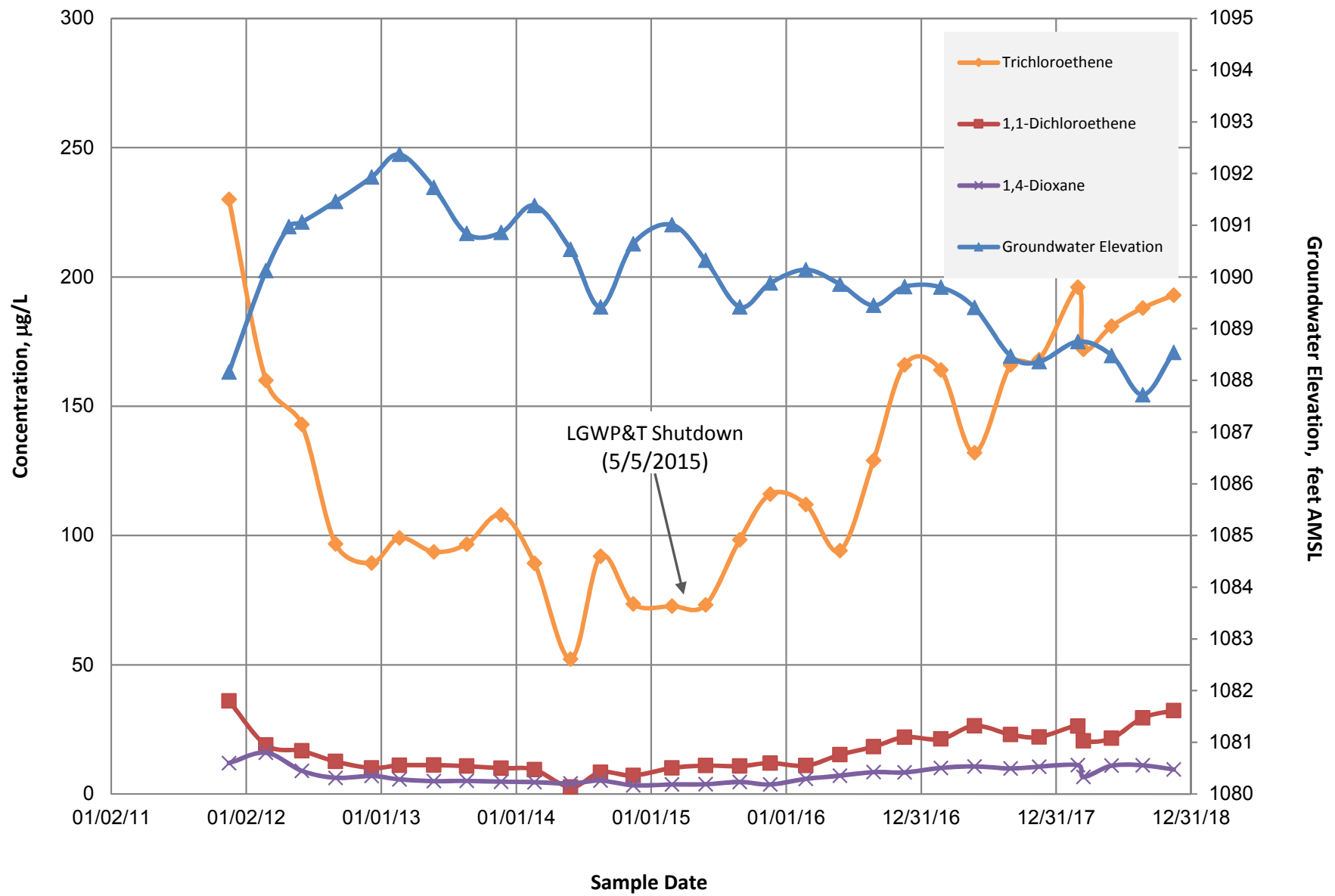


Figure 10
Monitor Well PT-3D Hydrograph

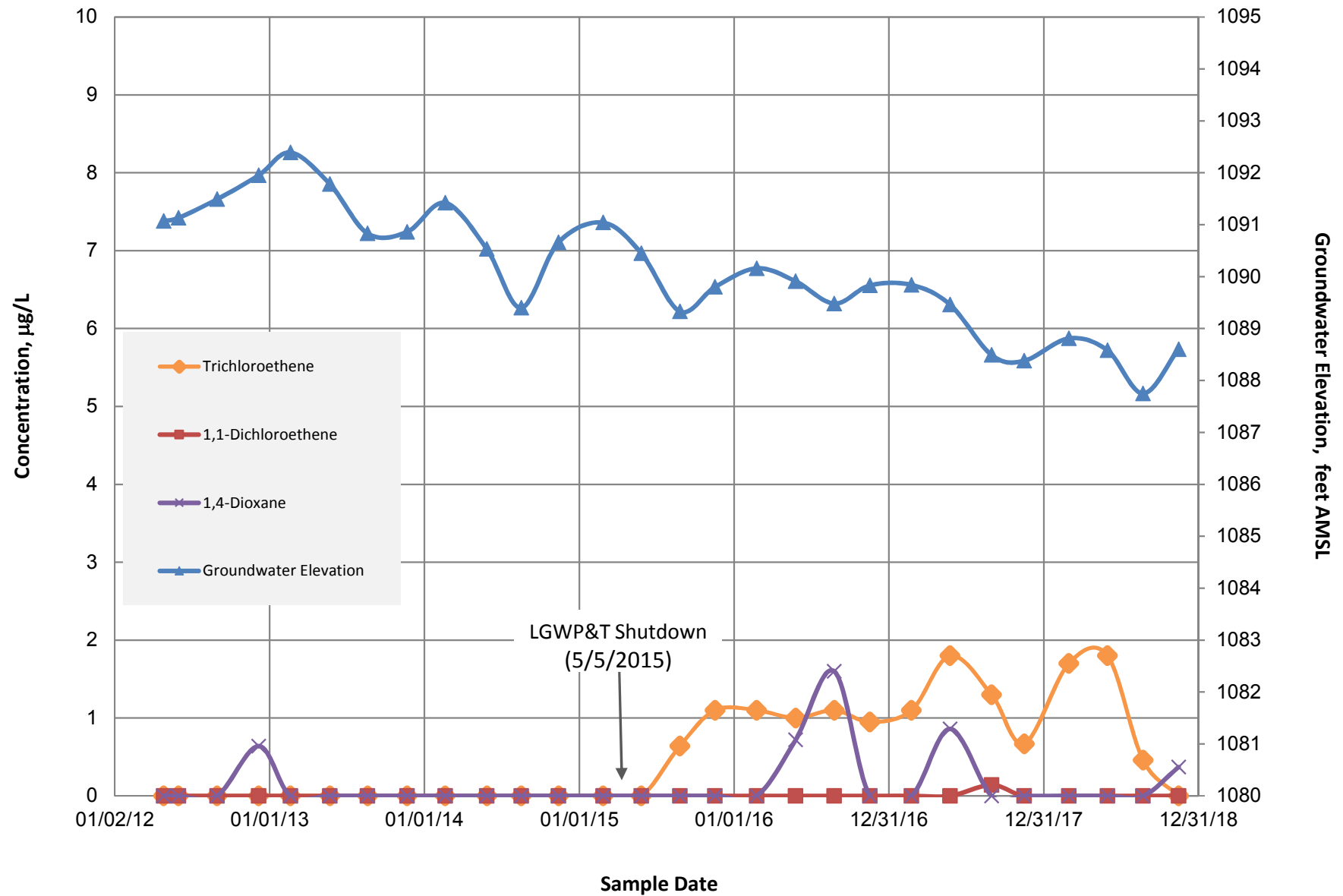


Figure 11
Monitor Well PT-4 Hydrograph

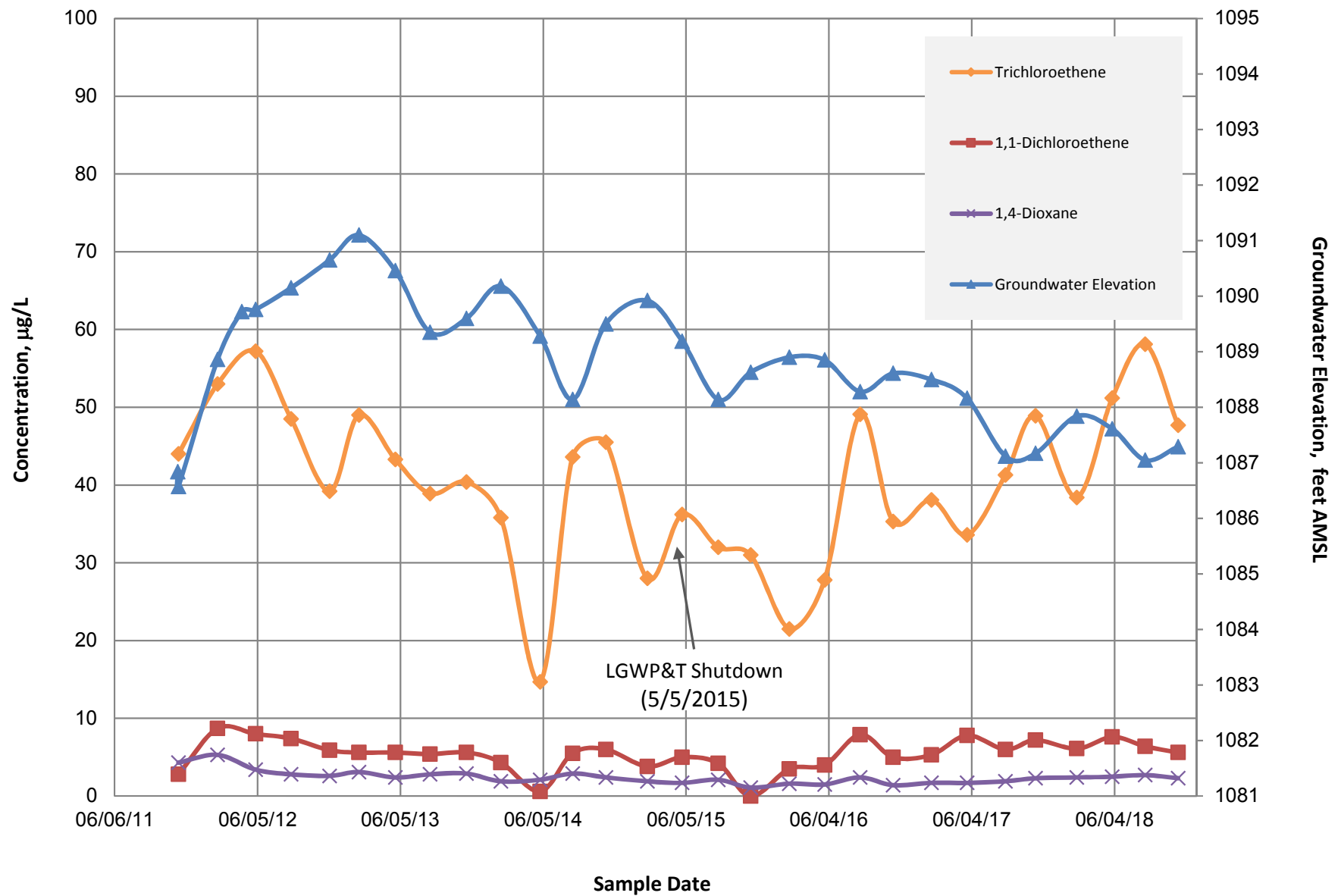


Figure 12
Monitor Well PT-4D Hydrograph

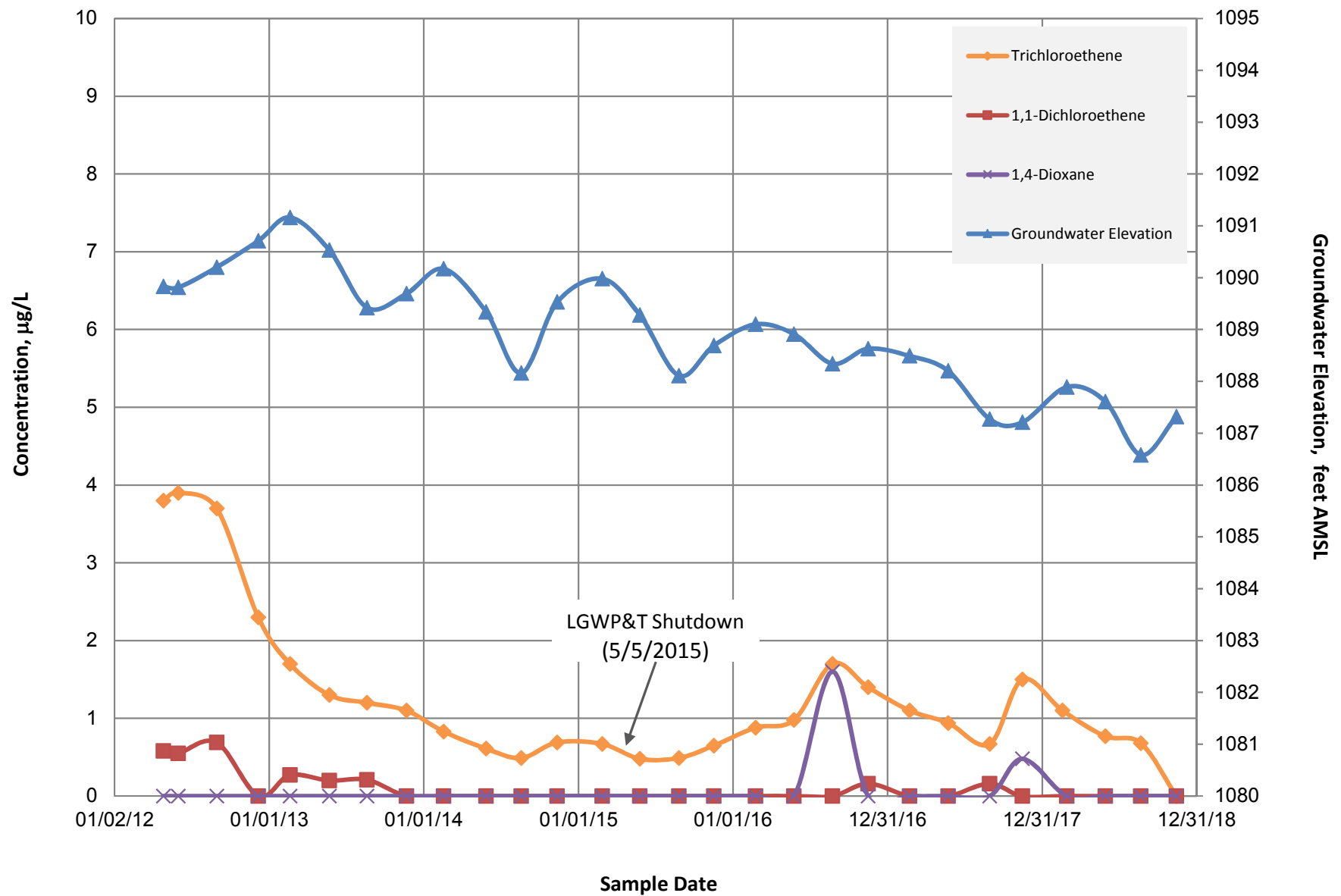


Figure 13
Monitor Well PT-5 Hydrograph

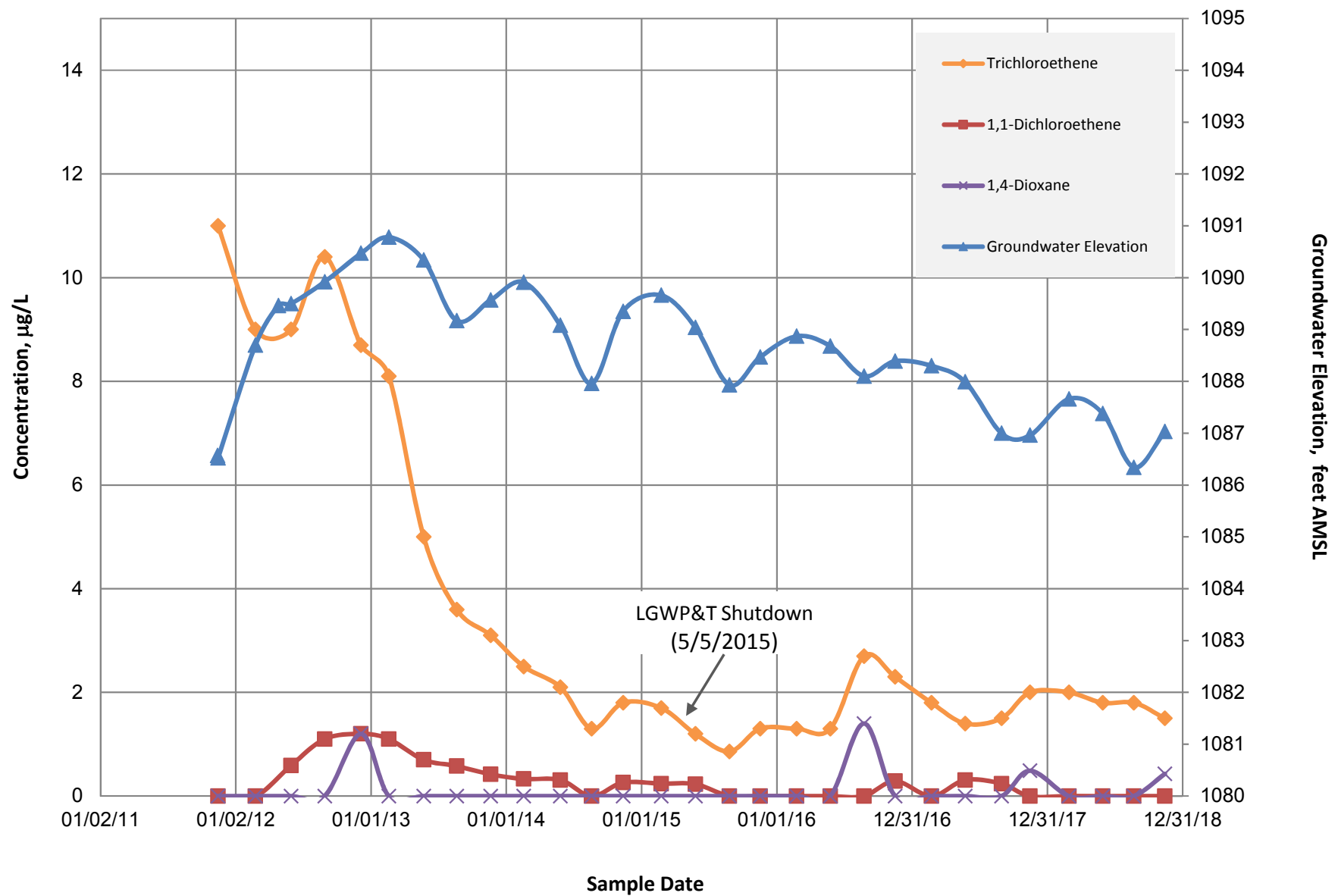


Figure 14
Monitor Well LB-1 Hydrograph

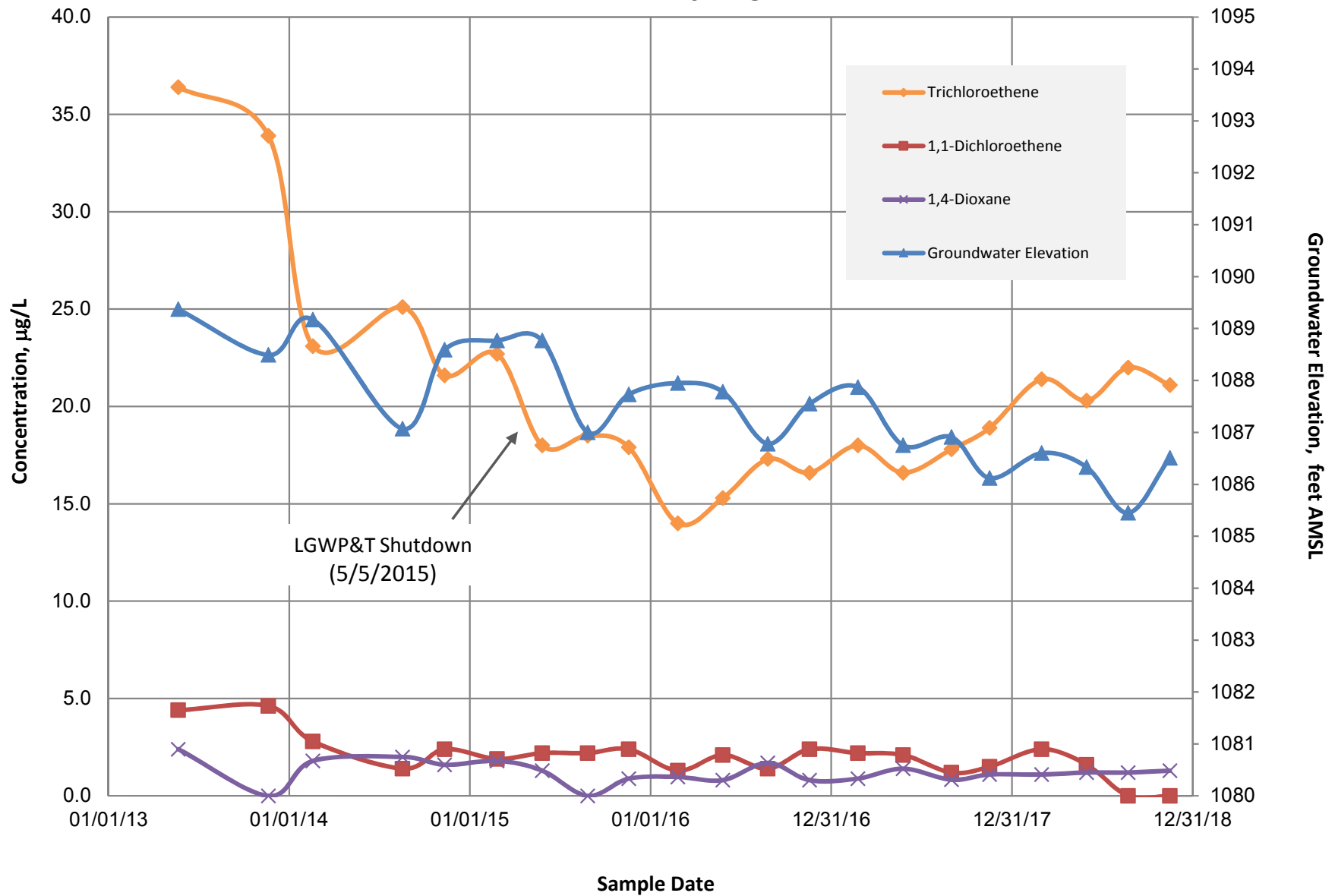


Figure 15
Monitor Well LB-13 Hydrograph

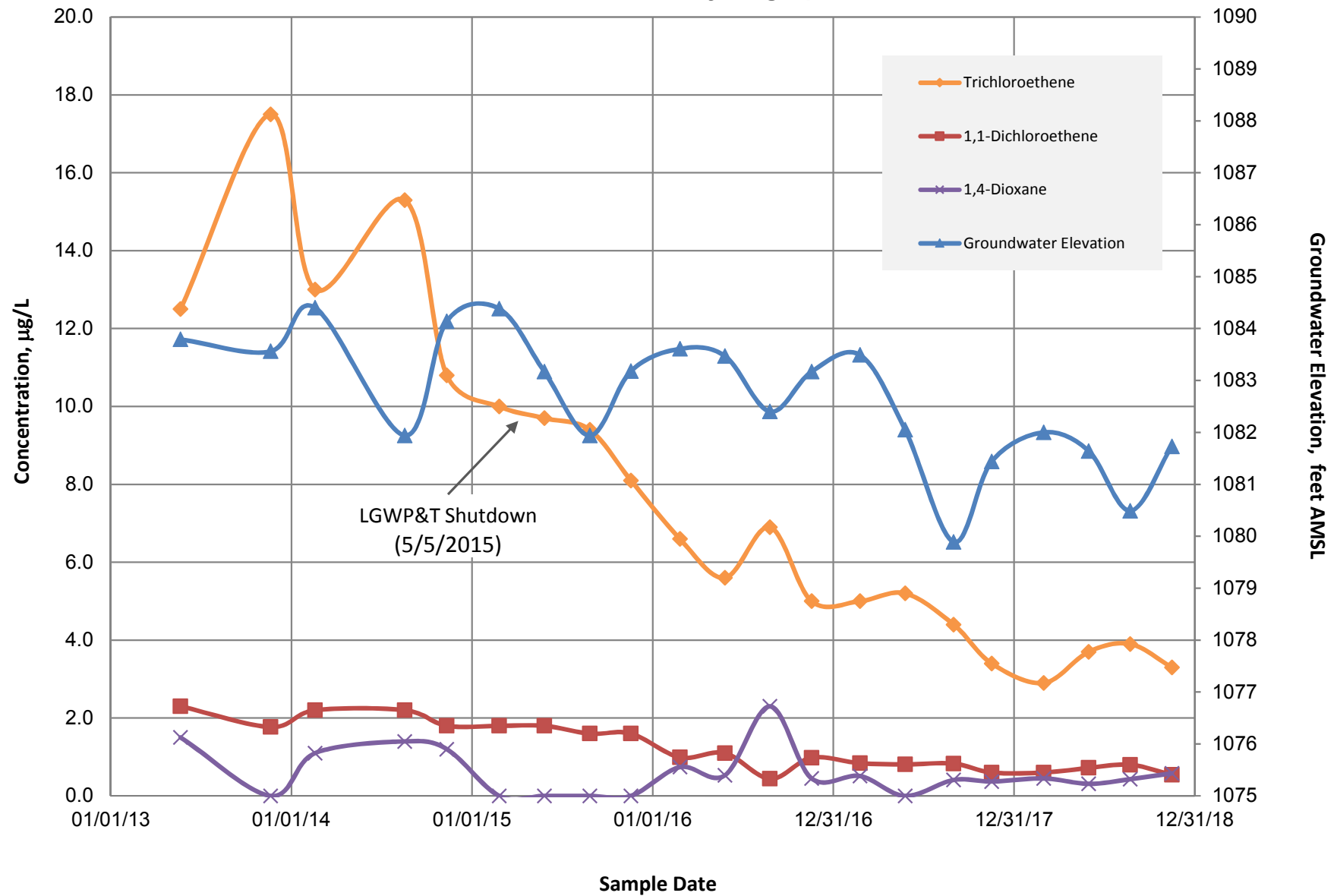


Figure 16
Monitor Well LB-17 Hydrograph

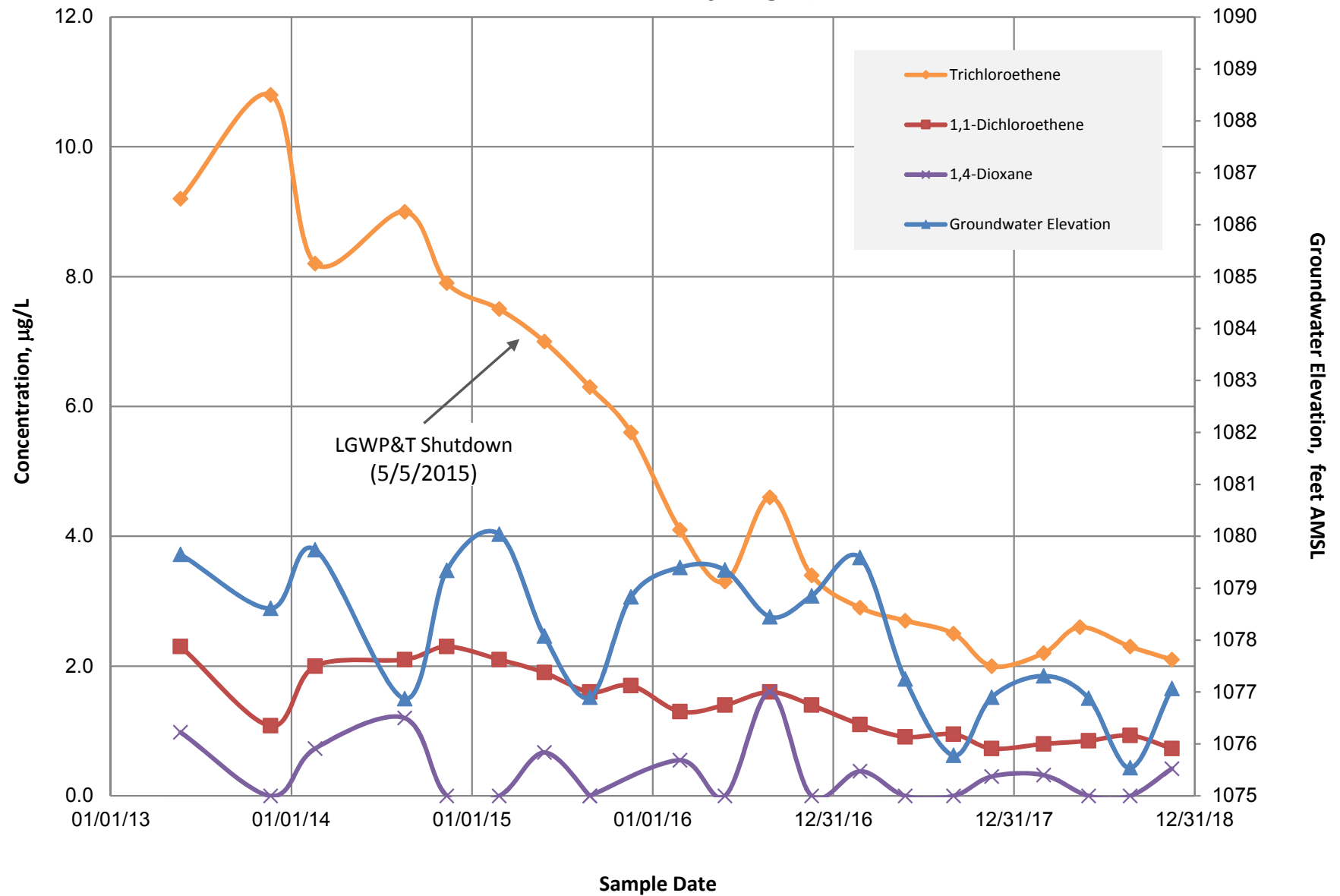
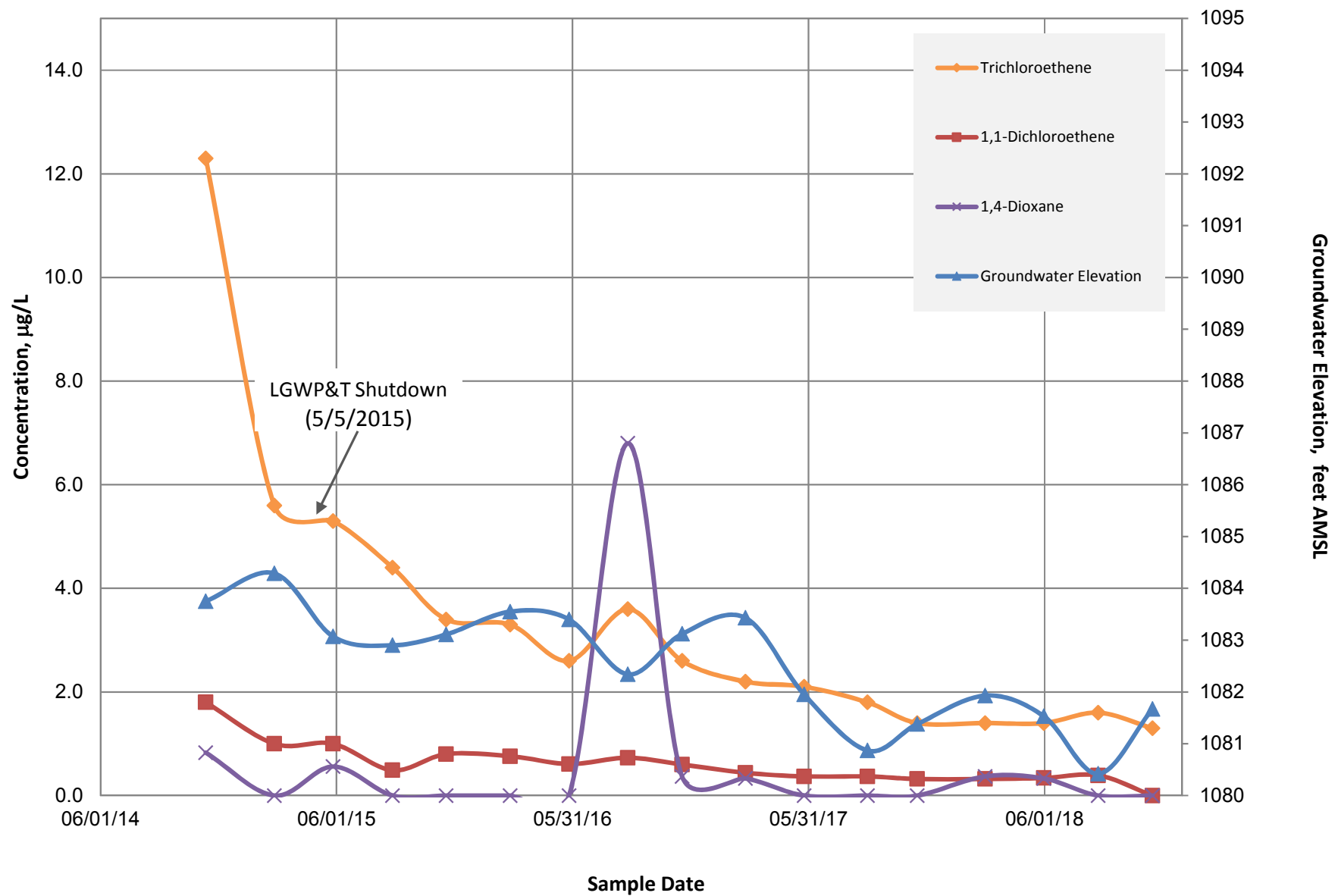


Figure 17
Monitor Well PT-6D Hydrograph



APPENDIX A

Well Sampling Records

HALEY
ALDRICH

Instrument Calibration Log

Project Plymouth Tube Quaterly GW Sampling File No. 128159-003
Location Chandler, AZ Date 11/13/18
Contractor ✓ Field Rep. S. Hensel and C. Plonick
Weather clear, slight breeze Outdoor Temp ~60°

E. Fredrickson

Equipment ID 03A01073 AA YSI 556 MPS
Time Calibration Started: 800 Time Calibration Completed: 830

Dissolved Oxygen (100%)

Reading Before Calibration: 136.7
Barometric Pressure: 726.5
Temperature (C°): 10.72
Reading after calibration: 9.88

Probe Type (Check One)

Membrane ☒ Optical ☐

Specific Conductivity/Conductivity (10 ms/cm)

Reading Before Calibration: 525
9.89°C af
Calibration Value: 1413
Temperature (C°): 9.89°C
Lot/Expiration: 01/2019
Reading After Calibration: 1713

pH 7

Reading Before Calibration: 6.65
Calibration Value: 7.0
Temperature (C°): 10.38°C
Lot/Expiration: 01/2020
Reading After Calibration: 6.98

ORP

Standard (mv) at 25°C

Reading Before Calibration: 264.3
Calibration Value: 240
Temperature (C°): 10.32°C
Lot/Expiration: 10/2022
Reading After Calibration: 239.9

(Check One)

SPOT CHECK ☐CALIBRATION ☒

Dissolved Oxygen (0 mg/L)

Reading _____

Temperature (C°) _____

Lot/Expiration: _____

Reading less than 0.20 mg/L? _____

pH 10

Reading Before Calibration: 9.73
Calibration Value: 10.00
Temperature (C°): 10.77°C
Lot/Expiration: 06/2019
Reading After Calibration: 9.99

PM Calibration Check

Time Start: _____

Time End: _____

pH 4

Reading Before Calibration: 4.45
Calibration Value: 7.01
Temperature (C°): 10.06°C
Lot/Expiration: 06/2019
Reading After Calibration: 3.98

DO 100 % _____

pH 7 _____

pH4 _____

pH10 _____

Conductivity _____

ORP (mv) _____

DO 0 mg/L _____

Notes:

HALEY
ALDRICH

Instrument Calibration Log

Project Plymouth Tube Quaterly GW Sampling File No. 128159-003
Location Chandler, AZ Date 11/14/18 EF
Contractor - Field Rep. S. Hensel and C. Plank E. Fredrickson
Weather Partly cloudy, slight breeze Outdoor Temp 60°F

Equipment ID 103A0103 AA YSI 556 MPSTime Calibration Started: 0730Time Calibration Completed: 0753

Dissolved Oxygen (100%)

Reading Before Calibration: 90.0
Barometric Pressure: 765.5
Temperature (C°): 12.96
Reading after calibration: 100.0

Probe Type (Check One)

Membrane ☒ Optical ☐

Specific Conductivity/Conductivity (10 ms/cm)

Reading Before Calibration: 1389
Calibration Value: 1413
Temperature (C°): 10.92
Lot/Expiration: KCT140108/1/00/19
Reading After Calibration: 1413

pH 7

Reading Before Calibration: 6.34
Calibration Value: 7.6
Temperature (C°): 9.17
Lot/Expiration: 7801M99/1/1/2020
Reading After Calibration: 7.00

ORP

Standard (mv) at 25°C

Reading Before Calibration: 239.1
Calibration Value: 240
Temperature (C°): 9.56
Lot/Expiration: 2079/10/2022
Reading After Calibration: 240.0

(Check One)

SPOT CHECK ☐CALIBRATION ☒

Dissolved Oxygen (0 mg/L)

pH 10

Reading Before Calibration: 9.25
Calibration Value: 10.0
Temperature (C°): 20.54 9.67
Lot/Expiration: 2017061920/06/27/2019
Reading After Calibration: 10.00

Reading

Temperature (C°)

Lot/Expiration:

Reading less than 0.20 mg/L?

PM Calibration Check

Time Start:

Time End:

pH 4

Reading Before Calibration: 3.83
Calibration Value: 4.01
Temperature (C°): 9.20
Lot/Expiration: 2017062206/06/30/19
Reading After Calibration: 3.98

DO 100 %

pH 7

pH4

pH10

Conductivity

ORP (mv)

DO 0 mg/L

Notes:

HALEY
ALDRICH

Instrument Calibration Log

Project Plymouth Tube Quaterly GW Sampling File No. 128159-003
Location Chandler, AZ Date 11/15/18
Contractor - Field Rep. S. Hensel and E. Plazak
Weather Cool ~ 50° Outdoor Temp - 50°

Equipment ID 103A0103AA YSI 556 MPSTime Calibration Started: 7:35Time Calibration Completed: 7:55

Dissolved Oxygen (100%)

Reading Before Calibration: 104.3
Barometric Pressure: 765.5
Temperature (C°): 10.97°
Reading after calibration: 99.8

Probe Type (Check One)

Membrane ☒ Optical ☐

Specific Conductivity/Conductivity (10 ms/cm)

Reading Before Calibration: 1043
Calibration Value: 1413
Temperature (C°): 6.76
Lot/Expiration: 01/08/2019
Reading After Calibration: 1412

KCT180108

ORP

Standard (mv) at 25°C

pH 7

Reading Before Calibration: 7.54
Calibration Value: 7.0
Temperature (C°): 8.64°
Lot/Expiration: 01/2020 - 4801799
Reading After Calibration: 6.99

Reading Before Calibration: 254.1
Calibration Value: 240 mV
Temperature (C°): 6.84
Lot/Expiration: 10/2022 - 2079
Reading After Calibration: 239.8

(Check One)

SPOT CHECK ☐CALIBRATION ☒

Dissolved Oxygen (0 mg/L)

pH 10

Reading Before Calibration: 9.96
Calibration Value: 10.0
Temperature (C°): 8.79
Lot/Expiration: 06/27/2019 - 2017061920
Reading After Calibration: 10.00

Reading _____

Temperature (C°) _____

Lot/Expiration: _____

Reading less than 0.20 mg/L? _____

PM Calibration Check

Time Start: _____

Time End: _____

pH 4

Reading Before Calibration: 3.76
Calibration Value: 4.01
Temperature (C°): 7.68
Lot/Expiration: 06/30/2019 - 2017062266
Reading After Calibration: 4.01

DO 100 % _____

pH 7 _____

pH4 _____

pH10 _____

Conductivity _____

ORP (mv) _____

DO 0 mg/L _____

Notes:



CHAIN OF CUSTODY

SGS North America Inc. - Houston
10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

PAGE 1 OF 1

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes							
Company Name Haley and Aldrich		Project Name Plymouth Tube		<div style="display: flex; align-items: center;"><div style="writing-mode: vertical-rl; transform: rotate(180deg);">82603</div><div style="writing-mode: vertical-rl; transform: rotate(180deg);">82605IM (1,4 Dioxane)</div></div>												<div>DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank</div>							
Street Address 400 E. Van Buren St		Street W Willis																					
City Phoenix		City Chandler																					
State AZ		State AZ																					
Zip 85004		Zip 																					
Project Contact Bruce Travers		Project # 128159-003		Billing Information (If different from Report to)												LAB USE ONLY							
E-mail		Client Purchase Order #		Company Name																			
Phone # 480-244-5891		City 		Street Address																			
Sampler(s) Name(s) S. Hensel + E. Fredrickson		Project Manager		City 																			
Phone #		Attention:		State 																			
Field ID / Point of Collection		Date		Time		Sampled By		Matrix		# of bottles		Number of preserved Bottles											
												HCl NaOH ZAN/COH HNO3 H2SO4 NONE DI Water MECH TSP NaHSO4 ENCORE OTHER											
PT-1D-120-111316		11/13/18		0930		SH/EF		GW		6		6											
PT-2D-120-111318		11/13/18		1047						6		6											
PT-5-90-111318		11/13/18		1210						6		6											
PT-4D-120-111318		11/13/18		1408						6		6											
PT-4-90-111318		11/13/18		1410						6		6											
ERB-111318		11/13/18		1130		SH/EF		GW		3		3											
Trip Blank										2		2											
Turnaround Time (Business days)		Approved By (SGS PM): / Date:		Data Deliverable Information												Comments / Special Instructions							
<input checked="" type="checkbox"/> Standard 10 Business Days <input checked="" type="checkbox"/> 5 Business Days RUSH <input type="checkbox"/> 4 Business Days RUSH <input type="checkbox"/> 3 Business Days RUSH <input type="checkbox"/> 2 Business Days RUSH <input type="checkbox"/> 1 Business Day EMERGENCY				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw Data																			
Emergency & Rush T/A data available via Lablink. Approval needed for RUSH/Emergency TAT																							
Relinquished by:		Date / Time:		Received By:		Date / Time:		Relinquished By:		Date / Time:		Received By:		Date / Time:									
1		11/13/18 1545		[Signature]		11/13/18 1545		2		11/13/18 1545		2		11/13/18 1545									
3				3				4				4											
5				5				Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact <input type="checkbox"/> Absent		Preserved where applicable <input type="checkbox"/>		On Ice <input type="checkbox"/> Cooler Temp. °C									
												Therm ID:											



CHAIN OF CUSTODY

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PAGE 1 OF 1

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes	
Company Name Haley and Aldrich		Project Name: Plymouth Tube					
Street Address 400 E Van Buren St		Street W Willis					
City State Zip Phoenix AZ 85004		City State Chandler AZ		Billing Information (if different from Report to)			
Project Contact Bruce Travers		Project # 128159-003		Company Name			
Phone # 480-244-5891		Client Purchase Order #		Street Address			
Sampler(s) Name(s) S. Hensel + E. Fredrickson		Project Manager		City State Zip			
Phone #		Attention:					
SGS Sample #		Collection		Number of preserved Bottles			
Field ID / Point of Collection		Date	Time	Sampled By	Matrix	# of bottles	
PT-3D-126-111418		11/14/18	0825	SH+EF	GW	6	
PT-3-90-111418			0910			6	
PT-15-90-111418			1045			6	
PT-25-90-111418			1145			6	
LB-TR-90-111418			1250			6	
PT-15-90-111418-DUP			1045			6	
ERB-111418			0943			3	
Trip Blank						2	
Turnaround Time (Business days)				Data Deliverable Information		Comments / Special Instructions	
<input checked="" type="checkbox"/> Standard 10 Business Days <input type="checkbox"/> 5 Business Days RUSH <input type="checkbox"/> 4 Business Days RUSH <input type="checkbox"/> 3 Business Days RUSH <input type="checkbox"/> 2 Business Days RUSH <input type="checkbox"/> 1 Business Day EMERGENCY Emergency & Rush T/A data available via Lablink. Approval needed for RUSH/Emergency TAT		Approved By (SGS PM): / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULL1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw Data		<input type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	
Sample Custody must be documented below each time samples change possession, including courier delivery.							
Relinquished by: 1	Date / Time: 11/14/18 1320	Received By: 1	Date / Time: 11/14/18 1320	Relinquished By:	Date / Time:	Received By:	Date / Time:
Relinquished by: 3	Date / Time:	Received By: 3	Date / Time:	Relinquished By:	Date / Time:	Received By:	Date / Time:
Relinquished by: 5	Date / Time:	Received By: 5	Date / Time:	Custody Seal #	<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact <input type="checkbox"/> Absent	Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. °C	Therm ID

SGS North America Inc. - Houston
10165 Harwin Dr. Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

Client / Reporting Information				Project Information				Requested Analyses																Matrix Codes																			
Company Name Haley + Aldrich				Project Name: Plymouth Tube				<div style="position: relative; height: 100px;"> } } </div>																		LAB USE ONLY																	
Street Address 400 E Van Buren St				Street W. Willis																																							
City State Zip Phx AZ 85004				City State Chandler AZ																																							
Project Contact Bruce Travers				Project # 128159-003																																							
Phone # 480-244-5891				Client Purchase Order #																																							
Sample(s) Name(s) S. Hensel + E. Fredrickson				Project Manager				Attention:																																			
Field ID / Point of Collection				Collection				Number of preserved Bottles																																			
				Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	Zn/NaOH	HNO3	H2SO4	NONE	D1 Water	MEOH	TSP	NaHSO4	ENCORE	OTHER																							
PT-6D-165-111518				11/15/18	0845	SH+EF	(SW)	6	6												X	X																					
LB-13-124-111518					0935			6	6												X	X																					
LB-17-138-111518					1055			6	6												X	X																					
LB-1-88-111518					1210			6	6												X	X																					
ERB-111518								3	3												X																						
Trip Blank								2	2												X																						
Turnaround Time (Business days)								Data Deliverable Information																Comments / Special Instructions																			
<input checked="" type="checkbox"/> Standard 10 Business Days <input type="checkbox"/> 5 Business Days RUSH <input type="checkbox"/> 4 Business Days RUSH <input type="checkbox"/> 3 Business Days RUSH <input type="checkbox"/> 2 Business Days RUSH <input type="checkbox"/> 1 Business Day EMERGENCY				Approved By (SGS PM): / Date:				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw Data																<input type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other																			
Emergency & Rush T/A data available via Lablink. Approval needed for RUSH/Emergency TAT																																											
Sample Custody must be documented below each time samples change possession, including courier delivery.																																											
Relinquished by:				Date / Time:				Received By:				Date / Time:				Relinquished By:				Date / Time:				Received By:		Date / Time:																	
1				11/15/18 1400				1				11/15/18 1400				2				2																							
Relinquished by:				Date / Time:				Received By:				Date / Time:				Relinquished By:				Date / Time:				Received By:		Date / Time:																	
3								3								4																											
Relinquished by:				Date / Time:				Received By:				Date / Time:				Custody Seal #				Preserved where applicable				On Ice <input type="checkbox"/>		Cooler Temp. °C																	
5								5												<input type="checkbox"/> Intact <input type="checkbox"/> Not intact <input type="checkbox"/> Absent																							

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID: PT-15
Sample ID: PT-15-90- 111418
Duplicate ID: PT-15-90- 111418- DUP
Sample Depth (ft btoc): 90
Project/Task No.: 128159-003
Project Name: Plymouth Tube
Sample Date: 11/14/2018
Sampled By: S. Hensel and G. Blaziak^{5th}
E. Fredrickson

Initial Depth to Water: 67.32
Depth to Water at Sampling Mid-Point (ft btoc): N/A
Depth to Water after Sampling (ft btoc): 67.30
Casing Depth (ft bgs): 100
Well Diameter (inches): 4
Minimum Purge Volume Required: N/A
Approximate Volume Removed (gal.): 2.2
Method of Sampling/Purging: QED Bladder Pump

Time	Intake Depth	Rate (mL/min)	Cum. Vol. (gallons)	Temp. (°C)	pH (S.U.)	Specific Electrical Conductance (uS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Remarks (color, turbidity, and sediment)
0952	90								Pump on
0956	90								water in cell
1000	90	200		23.48	7.86	2967	2.31	197.1	clear
1003	90	200		24.21	7.87	3042	1.86	198.1	clear
1006	90	200		24.57	7.87	3073	1.80	174.3	clear
1009	90	200		24.70	7.87	3087	1.76	155.1	clear
1012	90	200		24.84	7.87	3099	1.87	134.7	clear
1014	90	200		24.89	7.87	3102	1.81	120.0	clear
1016	90	200		24.82	7.87	3100	1.68	103.4	clear
1018	90	200		24.92	7.87	3104	1.56	90.6	clear
1020	90	200		24.90	7.87	3105	1.47	76.4	clear
1022	90	200		24.89	7.87	3106	1.45	68.5	clear
1024	90	200		24.93	7.87	3107	1.39	59.9	clear
1026									switch CO ₂ tanks
1028	90	200		24.31	7.87	3059	1.40	47.6	clear
1031	90	200		24.68	7.87	3080	1.36	44.6	clear
1034	90	200		24.96	7.87	3107	1.33	38.2	clear
1037	90	200		24.92	7.87	3109	1.28	30.8	clear
1039	90	200		24.89	7.87	3107	1.29	28.2	clear
1041	90	200		24.87	7.87	3106	1.30	25.5	clear
1045									collect sample
1052									pump off

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature: 

0943 - ERB - 111418
PT-15-90-111418-DUP

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-1D	Initial Depth to Water:	67.94
Sample ID:	PT-1D-120- 11142017	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	67.55
Sample Depth (ft btoc):	120	Casing Depth (ft bgs):	135
Project/Task No.:	128159-002	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2017	Approximate Volume Removed (gal.):	1.1
Sampled By:	C. Price & S. Hensel	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	LB-7R	Initial Depth to Water:	66.44
Sample ID:	LB-7R-90- 111418	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	66.46
Sample Depth (ft btoc):	90	Casing Depth (ft bgs):	101.5
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2018	Approximate Volume Removed (gal.):	1.3
Sampled By:	S. Hensel and C. Blaziak ^{SH} E. Fredrickson	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature: _____

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-2S	Initial Depth to Water:	65.79
Sample ID:	PT-2S-90- 111418	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	65.77
Sample Depth (ft btoc):	90	Casing Depth (ft bgs):	100
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2018	Approximate Volume Removed (gal.):	1.1
Sampled By:	S. Hensel and C. Plazek E. Smith	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-2D	Initial Depth to Water:	66.37
Sample ID:	PT-2D-120- 111318	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	66.35
Sample Depth (ft btoc):	120	Casing Depth (ft bgs):	135
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/13/2018	Approximate Volume Removed (gal.):	1.2
Sampled By:	S. Hensel and C. Plazek ³⁶	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-3	Initial Depth to Water:	64.58
Sample ID:	PT-3-90- 111418	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	64.60
Sample Depth (ft btoc):	90	Casing Depth (ft bgs):	120
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2018	Approximate Volume Removed (gal.):	1.1
Sampled By:	S. Hensel and C. Plazak ^{SH} E. Fredrickson	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-3D	Initial Depth to Water:	64.93
Sample ID:	PT-3D-126- 111418	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	64.95
Sample Depth (ft btoc):	126	Casing Depth (ft bgs):	151
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2018	Approximate Volume Removed (gal.):	1.2
Sampled By:	S. Hensel and C. Plonick	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-4	Initial Depth to Water:	63.93
Sample ID:	PT-4-90- 11142017	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	63.94
Sample Depth (ft btoc):	90	Casing Depth (ft bgs):	120
Project/Task No.:	128159-002	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/14/2017	Approximate Volume Removed (gal.):	1.0
Sampled By:	C. Price & S. Hensel	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-4D	Initial Depth to Water:	63.86
Sample ID:	PT-4D-126- 111318	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	63.81
Sample Depth (ft btoc):	126	Casing Depth (ft bgs):	140
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/13/2018	Approximate Volume Removed (gal.):	1.2
Sampled By:	S. Hensel and E. Plonick E. Friedrichs	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID: PT-5 Initial Depth to Water: 63.62
 Sample ID: PT-5-90- 111318 Depth to Water at Sampling Mid-Point (ft btoc): N/A
 Duplicate ID: Depth to Water after Sampling (ft btoc): 63.63
 Sample Depth (ft btoc): 90 Casing Depth (ft bgs): 105
 Project/Task No.: 128159-003 Well Diameter (inches): 4
 Project Name: Plymouth Tube Minimum Purge Volume Required: N/A
 Sample Date: 11/13/2018 Approximate Volume Removed (gal.): 1.1
 Sampled By: S. Hensel and E. Plazek Method of Sampling/Purging: QED Bladder Pump
 E. Fredrickson

Time	Intake Depth	Rate (mL/min)	Cum. Vol. (gallons)	Temp. (°C)	pH (S.U.)	Specific Electrical Conductance (uS/cm)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Remarks (color, turbidity, and sediment)
1138	90								Pump on
1151	90	200		24.34	7.38	3249	6.10	174.5	clear
1154	90	200		24.44	7.35	3256	5.57	169.8	clear
1156	90	200		24.52	7.37	3261	5.29	165.8	clear
1158	90	200		24.62	7.35	3266	5.08	161.8	clear
1200	90	200		24.74	7.37	3277	4.96	158.5	clear
1210	90		1.1						Collect samples
1215									pump off
1141									CO2 tank change
1148									flow in cell

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature: 

1130-ERB-11/13/18

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	LB-1	Initial Depth to Water:	61.48
Sample ID:	LB-1-88- 111518	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	60.55
Sample Depth (ft btoc):	88	Casing Depth (ft bgs):	90 (screen 30-90)
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/15/2018	Approximate Volume Removed (gal.):	1.1
Sampled By:	S. Hensel and C. Plazek E. Fredrickson	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	LB-13	Initial Depth to Water:	53.86
Sample ID:	LB-13-124- 111518	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	53.75
Sample Depth (ft btoc):	124	Casing Depth (ft bgs):	140 (screen 50-140)
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/15/2018	Approximate Volume Removed (gal.):	1.2
Sampled By:	S. Hensel and C. Plazak E. Fredrickson	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	PT-6D	Initial Depth to Water:	54.12
Sample ID:	PT-6D-165- 111518	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	54.14
Sample Depth (ft btoc):	165	Casing Depth (ft bgs):	190 (screen 140-190)
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/15/2018	Approximate Volume Removed (gal.):	1.1
Sampled By:	S. Hensel and C. Plazak E. Smith	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

HALEY & ALDRICH WELL SAMPLING RECORD

Well ID:	LB-17	Initial Depth to Water:	52.72
Sample ID:	LB-17-138- 111518	Depth to Water at Sampling Mid-Point (ft btoc):	N/A
Duplicate ID:		Depth to Water after Sampling (ft btoc):	52.70
Sample Depth (ft btoc):	138	Casing Depth (ft bgs):	140 (55-140)
Project/Task No.:	128159-003	Well Diameter (inches):	4
Project Name:	Plymouth Tube	Minimum Purge Volume Required:	N/A
Sample Date:	11/15/2018	Approximate Volume Removed (gal.):	1.2
Sampled By:	S. Hensel and C. Plazak ^{SH}	Method of Sampling/Purging:	QED Bladder Pump

[illegible]

Water Quality Meter Make/Model: YSI 556

Field Personnel Signature:

APPENDIX B

Laboratory Data

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Haley & Aldrich

Plymouth Tube Groundwater Monitoring - 128159-003

128159-003

SGS Job Number: TD30551

Sampling Date: 11/13/18

Report to:


Haley & Aldrich, Inc.
400 W. Van Buren Street Suite 545
Phoenix, AZ 85004
btravers@haleyaldrich.com; rabrown@haleyaldrich.com

ATTN: Bruce Travers

Total number of pages in report: 58



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.


Richard Rodriguez
Laboratory Director

Client Service contact: Anita Patel 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628)
KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.



10165 Harwin Drive
Houston, TX 77036
Tel: 713-271-4700
www.accutest.com

Wednesday, November 21, 2018

Haley & Aldrich, Inc.
400 W. Van Buren Street Suite 545
Phoenix, AZ 85004

ATTN: Bruce Travers

RE: SGS Accutest Job TD30551 Reissue

Dear Mr. Travers:

The final report has been revised to correct the sample ID from LB-2D-120 111318 to PT-2D-120 111318 as noted on the COC.

Please feel free to contact me if I can be of further assistance.

Sincerely,

Anita Patel

Anita Patel
Project Manager

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Sample Summary

Haley & Aldrich

Job No: TD30551

Plymouth Tube Groundwater Monitoring - 128159-003
Project No: 128159-003

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
TD30551-1	11/13/18	09:30	11/14/18	AQ	Ground Water	PT-1D-120-111318
TD30551-2	11/13/18	10:47	11/14/18	AQ	Ground Water	PT-2D-120-111318
TD30551-3	11/13/18	12:10	11/14/18	AQ	Ground Water	PT-5-90-111318
TD30551-4	11/13/18	14:55	11/14/18	AQ	Ground Water	PT-4D-126-111318
TD30551-5	11/13/18	14:10	11/14/18	AQ	Ground Water	PT-4-90-111318
TD30551-6	11/13/18	11:30	11/14/18	AQ	Ground Water	ERB-111318
TD30551-7	11/13/18	00:00	11/14/18	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Haley & Aldrich

Job No TD30551

Site: Plymouth Tube Groundwater Monitoring - 128159-003

Report Date 11/21/2018 12:33:38 P

6 Samples were collected on 11/13/2018 and received intact at SGS North America Inc (SGS) on 11/14/2018 and properly preserved in 1 cooler at 1.4 Deg C. The samples received an Accutest job number of TD30551. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ

Batch ID: F:VZ2059

- All data for batch F:MS41951 was analyzed at SGS North America Inc. - Orlando, FL.

MS Volatiles By Method SW846 8260C

Matrix: AQ

Batch ID: VE3228

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD30363-5MS, TD30363-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Duplicate Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- Matrix Spike Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Matrix Spike Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- TD30551-7 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-1 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-2 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-3 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-4 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-5 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9
- TD30551-6 for Vinyl chloride: CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Wednesday, November 21, 2018

Page 1 of 1

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Houston, TX

Job No: TD30551

Site: HALDAZP: Plymouth Tube Groundwater Monitoring -

Report Date: 11/21/2018 12:23:06

5 Sample(s) were collected on 11/13/2018 and were received at SGS North America Inc - Orlando on 11/16/2018 properly preserved, at 3.4 Deg. C and intact. These Samples received an SGS Orlando job number of TD30551. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ

Batch ID: VZ2059

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) TD30551-1MS, TD30551-1MSD were used as the QC samples indicated.

TD30551-3 for 1,4 Dioxane: AZ: E4.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)

Summary of Hits

Page 1 of 1

Job Number: TD30551
Account: Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003
Collected: 11/13/18



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
--------------------------	------------------	-----------------	----	-----	-------	--------

TD30551-1 PT-1D-120-111318

No hits reported in this sample.

TD30551-2 PT-2D-120-111318

Trichloroethylene	2.2	1.0	0.41	ug/l	SW846 8260C
-------------------	-----	-----	------	------	-------------

TD30551-3 PT-5-90-111318

1,4-Dioxane ^a	0.43 J	1.0	0.30	ug/l	SW846 8260B BY SIM
Trichloroethylene	1.5	1.0	0.41	ug/l	SW846 8260C

TD30551-4 PT-4D-126-111318

No hits reported in this sample.

TD30551-5 PT-4-90-111318

1,4-Dioxane ^b	2.3	1.0	0.30	ug/l	SW846 8260B BY SIM
1,1-Dichloroethylene	5.6	1.0	0.36	ug/l	SW846 8260C
Trichloroethylene	47.7	1.0	0.41	ug/l	SW846 8260C

TD30551-6 ERB-111318

No hits reported in this sample.

TD30551-7 TRIP BLANK

No hits reported in this sample.

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806 AZ:E4
(b) Analysis performed at SGS Orlando, FL. Cert# AZ0806



Houston, TX

Section 4

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	PT-1D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-1	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072260.D	1	11/17/18 05:05	FI	n/a	n/a	VE3228
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-1	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-1	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	PT-1D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-1	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54583.D	1	11/19/18 10:17	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	101%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-2D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-2	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072261.D	1	11/17/18 05:29	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-2D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-2	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	2.2	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	107%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-2D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-2	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

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Client Sample ID:	PT-2D-120-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-2	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54584.D	1	11/19/18 10:37	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-5-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-3	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072262.D	1	11/17/18 05:54	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-5-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-3	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	1.5	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-122%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	102%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-5-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-3	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	PT-5-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-3	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54585.D	1	11/19/18 10:57	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^b	0.43	1.0	0.30	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	96%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

(b) AZ:E4

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4D-126-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-4	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072263.D	1	11/17/18 06:18	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4D-126-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-4	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-122%
17060-07-0	1,2-Dichloroethane-D4	106%		68-124%
2037-26-5	Toluene-D8	102%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4D-126-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-4	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	PT-4D-126-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-4	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54586.D	1	11/19/18 11:17	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	96%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-5	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072264.D	1	11/17/18 06:43	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	5.6	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-5	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	47.7	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		72-122%
17060-07-0	1,2-Dichloroethane-D4	109%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-4-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-5	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	PT-4-90-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-5	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54587.D	1	11/19/18 11:37	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	2.3	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-6	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072265.D	1	11/17/18 07:07	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-6	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		72-122%
17060-07-0	1,2-Dichloroethane-D4	109%		68-124%
2037-26-5	Toluene-D8	102%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111318	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-6	Date Received:	11/14/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-7	Date Received:	11/14/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072259.D	1	11/17/18 04:40	FI	n/a	n/a	VE3228
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-7	Date Received:	11/14/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-122%
17060-07-0	1,2-Dichloroethane-D4	106%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/13/18
Lab Sample ID:	TD30551-7	Date Received:	11/14/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		72-126%

(a) CCV recovery was below method acceptance criteria. Low check standard confirms detectability. AZ:N1,V9

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.7
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Arizona Qualifiers
- Chain of Custody

Arizona Qualifiers

Job Number: TD30551
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

The following Arizona qualifiers have been applied to data and/or QC in this report.

Qual	Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
N1	See case narrative.
V9	CCV recovery was below method acceptance limits.

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FED-EX Tracking # 7737 1812 2220	Bottle Order Control #
SGS Quote #	SGS Job # T12345

EHS-A-QAC-0024-00-FORM-Houston - Standard COC

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Client

11-14-18

Hailey & Aldrich

Abstract

DL3

CF, °C

Corrected Temp of

SAMPLES CONTAINED IN COOLER

TD30551: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Page 1 of 3

Job Number: TD30551 **Client:** HALEY & ALDRICH **Project:** PLYMOUTH TUBE
Date / Time Received: _____ **Delivery Method:** _____ **Airbill #'s:** 773718122220
No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;
Cooler Temps (Initial/Adjusted): #1: (1.4/1.4);

Cooler Security		<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature		<u>Y or N</u>			
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
2. Cooler temp verification:	_____				
3. Cooler media:	Ice (Bag)				
Quality Control Preservation		<u>Y or N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Sample Integrity - Documentation		<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample Integrity - Condition		<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	Intact		
Sample Integrity - Instructions		<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Sample Receipt Log

Page 2 of 3

Job #: TD30551

Date / Time Received: 11/14/2018 10:20:00 AM

Initials: EC

Client: HALEY & ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30551-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-4	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4

5.2
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TD30551: Chain of Custody

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Sample Receipt Log

Page 3 of 3

Job #: TD30551

Date / Time Received: 11/14/2018 10:20:00 AM

Initials: EC

Client: HALEY & ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30551-4	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-5	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4
1	TD30551-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.4	0	1.4

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TD30551: Chain of Custody

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MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 3

Job Number: TD30551**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-MB	E0072258.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	

Method Blank Summary

Page 2 of 3

Job Number: TD30551**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-MB	E0072258.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	Result	RL	MDL	Units	Q
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	104% 72-122%
17060-07-0	1,2-Dichloroethane-D4	104% 68-124%

Method Blank Summary

Job Number: TD30551
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-MB	E0072258.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples: Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	101% 80-119%
460-00-4	4-Bromofluorobenzene	101% 72-126%

Blank Spike Summary

Page 1 of 3

Job Number: TD30551

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-BS	E0072254.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	126	101	46-129
71-43-2	Benzene	25	22.6	90	68-119
108-86-1	Bromobenzene	25	23.7	95	71-119
74-97-5	Bromochloromethane	25	23.9	96	71-118
75-27-4	Bromodichloromethane	25	24.4	98	72-118
75-25-2	Bromoform	25	20.6	82	54-123
104-51-8	n-Butylbenzene	25	24.9	100	66-123
135-98-8	sec-Butylbenzene	25	25.7	103	72-123
98-06-6	tert-Butylbenzene	25	25.3	101	70-124
108-90-7	Chlorobenzene	25	23.5	94	74-120
75-00-3	Chloroethane	25	29.4	118	61-132
67-66-3	Chloroform	25	24.0	96	73-122
95-49-8	o-Chlorotoluene	25	24.3	97	71-122
106-43-4	p-Chlorotoluene	25	24.8	99	73-120
75-15-0	Carbon disulfide	25	26.3	105	55-140
56-23-5	Carbon tetrachloride	25	25.6	102	68-133
75-34-3	1,1-Dichloroethane	25	24.2	97	72-121
75-35-4	1,1-Dichloroethylene	25	29.3	117	67-140
563-58-6	1,1-Dichloropropene	25	25.1	100	73-130
96-12-8	1,2-Dibromo-3-chloropropane	25	24.4	98	47-133
106-93-4	1,2-Dibromoethane	25	24.4	98	69-121
107-06-2	1,2-Dichloroethane	25	23.2	93	68-121
78-87-5	1,2-Dichloropropane	25	24.0	96	72-116
142-28-9	1,3-Dichloropropane	25	23.1	92	70-118
594-20-7	2,2-Dichloropropane	25	20.4	82	57-141
124-48-1	Dibromochloromethane	25	23.8	95	68-119
75-71-8	Dichlorodifluoromethane	25	24.9	100	29-182
156-59-2	cis-1,2-Dichloroethylene	25	23.7	95	72-117
10061-01-5	cis-1,3-Dichloropropene	25	22.4	90	71-118
541-73-1	m-Dichlorobenzene	25	24.1	96	73-117
95-50-1	o-Dichlorobenzene	25	23.2	93	71-117
106-46-7	p-Dichlorobenzene	25	23.1	92	71-116
156-60-5	trans-1,2-Dichloroethylene	25	24.4	98	68-124
10061-02-6	trans-1,3-Dichloropropene	25	24.1	96	72-127
100-41-4	Ethylbenzene	25	24.6	98	71-117
637-92-3	Ethyl tert-Butyl Ether	25	22.6	90	66-122

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30551

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-BS	E0072254.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
591-78-6	2-Hexanone	125	129	103	49-124
87-68-3	Hexachlorobutadiene	25	24.1	96	62-143
98-82-8	Isopropylbenzene	25	26.5	106	74-141
99-87-6	p-Isopropyltoluene	25	25.4	102	72-126
108-10-1	4-Methyl-2-pentanone	125	123	98	54-122
74-83-9	Methyl bromide	25	26.9	108	53-138
74-87-3	Methyl chloride	25	22.2	89	50-145
74-95-3	Methylene bromide	25	23.0	92	71-117
75-09-2	Methylene chloride	25	22.8	91	60-125
78-93-3	Methyl ethyl ketone	125	127	102	51-129
1634-04-4	Methyl Tert Butyl Ether	25	24.0	96	65-119
91-20-3	Naphthalene	25	24.7	99	43-139
103-65-1	n-Propylbenzene	25	25.3	101	72-123
100-42-5	Styrene	25	25.5	102	74-119
75-65-0	Tert Butyl Alcohol	250	236	94	35-146
630-20-6	1,1,1,2-Tetrachloroethane	25	25.2	101	74-119
71-55-6	1,1,1-Trichloroethane	25	24.8	99	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	25.1	100	62-121
79-00-5	1,1,2-Trichloroethane	25	24.2	97	70-119
87-61-6	1,2,3-Trichlorobenzene	25	23.0	92	44-144
96-18-4	1,2,3-Trichloropropane	25	23.8	95	61-124
120-82-1	1,2,4-Trichlorobenzene	25	22.6	90	57-132
95-63-6	1,2,4-Trimethylbenzene	25	24.8	99	70-121
108-67-8	1,3,5-Trimethylbenzene	25	25.2	101	66-119
127-18-4	Tetrachloroethylene	25	23.6	94	72-132
108-88-3	Toluene	25	23.1	92	73-119
79-01-6	Trichloroethylene	25	23.4	94	73-121
75-69-4	Trichlorofluoromethane	25	32.3	129	46-152
75-01-4	Vinyl chloride	25	22.1	88	54-126
1330-20-7	Xylene (total)	75	74.9	100	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	72-122%
17060-07-0	1,2-Dichloroethane-D4	101%	68-124%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30551
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3228-BS	E0072254.D	1	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples: Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	101%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: TD30551

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30363-5MS	E0072267.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5MSD	E0072268.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5 ^a	E0072266.D	10	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	TD30363-5 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	1250	1310	105	1250	1180	94	10	46-129/25
71-43-2	Benzene	ND	250	230	92	250	227	91	1	68-119/12
108-86-1	Bromobenzene	ND	250	237	95	250	236	94	0	71-119/12
74-97-5	Bromochloromethane	ND	250	241	96	250	237	95	2	71-118/13
75-27-4	Bromodichloromethane	ND	250	249	100	250	245	98	2	72-118/16
75-25-2	Bromoform	ND	250	187	75	250	187	75	0	54-123/17
104-51-8	n-Butylbenzene	ND	250	253	101	250	250	100	1	66-123/14
135-98-8	sec-Butylbenzene	ND	250	259	104	250	256	102	1	72-123/13
98-06-6	tert-Butylbenzene	ND	250	256	102	250	254	102	1	70-124/15
108-90-7	Chlorobenzene	ND	250	240	96	250	234	94	3	74-120/12
75-00-3	Chloroethane	ND	250	304	122	250	294	118	3	61-132/16
67-66-3	Chloroform	ND	250	250	100	250	242	97	3	73-122/13
95-49-8	o-Chlorotoluene	ND	250	246	98	250	245	98	0	71-122/12
106-43-4	p-Chlorotoluene	ND	250	252	101	250	250	100	1	73-120/12
75-15-0	Carbon disulfide	ND	250	249	100	250	233	93	7	55-140/24
56-23-5	Carbon tetrachloride	ND	250	264	106	250	256	102	3	68-133/20
75-34-3	1,1-Dichloroethane	ND	250	250	100	250	241	96	4	72-121/14
75-35-4	1,1-Dichloroethylene	ND	250	297	119	250	271	108	9	67-140/18
563-58-6	1,1-Dichloropropene	ND	250	264	106	250	258	103	2	73-130/15
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	232	93	250	235	94	1	47-133/23
106-93-4	1,2-Dibromoethane	ND	250	246	98	250	243	97	1	69-121/13
107-06-2	1,2-Dichloroethane	68.5	250	308	96	250	304	94	1	68-121/12
78-87-5	1,2-Dichloropropane	ND	250	246	98	250	241	96	2	72-116/12
142-28-9	1,3-Dichloropropane	ND	250	236	94	250	231	92	2	70-118/12
594-20-7	2,2-Dichloropropane	ND	250	173	69	250	168	67	3	57-141/16
124-48-1	Dibromochloromethane	ND	250	232	93	250	229	92	1	68-119/15
75-71-8	Dichlorodifluoromethane	ND	250	251	100	250	236	94	6	29-182/23
156-59-2	cis-1,2-Dichloroethylene	ND	250	239	96	250	234	94	2	72-117/13
10061-01-5	cis-1,3-Dichloropropene	ND	250	217	87	250	214	86	1	71-118/18
541-73-1	m-Dichlorobenzene	ND	250	242	97	250	239	96	1	73-117/12
95-50-1	o-Dichlorobenzene	ND	250	234	94	250	232	93	1	71-117/11
106-46-7	p-Dichlorobenzene	ND	250	231	92	250	228	91	1	71-116/11
156-60-5	trans-1,2-Dichloroethylene	ND	250	255	102	250	245	98	4	68-124/15
10061-02-6	trans-1,3-Dichloropropene	ND	250	229	92	250	228	91	0	72-127/17
100-41-4	Ethylbenzene	ND	250	255	102	250	249	100	2	71-117/12
637-92-3	Ethyl tert-Butyl Ether	ND	250	225	90	250	222	89	1	66-122/12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: TD30551

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30363-5MS	E0072267.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5MSD	E0072268.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5 ^a	E0072266.D	10	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Compound	TD30363-5	Spike	MS	MS	Spike	MSD	MSD	RPD	Limits	
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l		%	Rec/RPD
591-78-6	2-Hexanone	ND		1250	1340	107	1250	1300	104	3	49-124/21
87-68-3	Hexachlorobutadiene	ND		250	231	92	250	239	96	3	62-143/18
98-82-8	Isopropylbenzene	ND		250	268	107	250	270	108	1	74-141/13
99-87-6	p-Isopropyltoluene	ND		250	256	102	250	253	101	1	72-126/13
108-10-1	4-Methyl-2-pentanone	ND		1250	1270	102	1250	1250	100	2	54-122/20
74-83-9	Methyl bromide	ND		250	281	112	250	274	110	3	53-138/16
74-87-3	Methyl chloride	ND		250	193	77	250	202	81	5	50-145/17
74-95-3	Methylene bromide	ND		250	236	94	250	231	92	2	71-117/12
75-09-2	Methylene chloride	ND		250	242	97	250	227	91	6	60-125/16
78-93-3	Methyl ethyl ketone	ND		1250	1300	104	1250	1300	104	0	51-129/22
1634-04-4	Methyl Tert Butyl Ether	2230	E	250	2350	48* b	250	2370	56* b	1	65-119/13
91-20-3	Naphthalene	ND		250	231	92	250	239	96	3	43-139/28
103-65-1	n-Propylbenzene	ND		250	256	102	250	255	102	0	72-123/13
100-42-5	Styrene	ND		250	260	104	250	252	101	3	74-119/19
75-65-0	Tert Butyl Alcohol	ND		2500	2670	107	2500	2700	108	1	35-146/35
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	254	102	250	250	100	2	74-119/14
71-55-6	1,1,1-Trichloroethane	ND		250	258	103	250	250	100	3	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	253	101	250	254	102	0	62-121/17
79-00-5	1,1,2-Trichloroethane	ND		250	245	98	250	242	97	1	70-119/13
87-61-6	1,2,3-Trichlorobenzene	ND		250	216	86	250	220	88	2	44-144/27
96-18-4	1,2,3-Trichloropropane	ND		250	238	95	250	238	95	0	61-124/16
120-82-1	1,2,4-Trichlorobenzene	ND		250	218	87	250	222	89	2	57-132/18
95-63-6	1,2,4-Trimethylbenzene	ND		250	251	100	250	251	100	0	70-121/15
108-67-8	1,3,5-Trimethylbenzene	ND		250	255	102	250	253	101	1	66-119/15
127-18-4	Tetrachloroethylene	ND		250	234	94	250	229	92	2	72-132/14
108-88-3	Toluene	ND		250	237	95	250	232	93	2	73-119/13
79-01-6	Trichloroethylene	ND		250	241	96	250	234	94	3	73-121/13
75-69-4	Trichlorofluoromethane	ND		250	312	125	250	302	121	3	46-152/25
75-01-4	Vinyl chloride	ND		250	216	86	250	212	85	2	54-126/17
1330-20-7	Xylene (total)	ND		750	772	103	750	750	100	3	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30363-5	Limits
1868-53-7	Dibromofluoromethane	103%	102%	110%	72-122%
17060-07-0	1,2-Dichloroethane-D4	105%	103%	108%	68-124%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30551
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30363-5MS	E0072267.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5MSD	E0072268.D	10	11/17/18	FI	n/a	n/a	VE3228
TD30363-5 ^a	E0072266.D	10	11/17/18	FI	n/a	n/a	VE3228

The QC reported here applies to the following samples: Method: SW846 8260C

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5, TD30551-6, TD30551-7

CAS No.	Surrogate Recoveries	MS	MSD	TD30363-5	Limits
2037-26-5	Toluene-D8	101%	101%	101%	80-119%
460-00-4	4-Bromofluorobenzene	101%	102%	102%	72-126%

- (a) AZ:D2
- (b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Misc. Forms

Custody Documents and Other Forms

(SGS Orlando, FL)

Includes the following where applicable:

- Chain of Custody

10165 Harwin Drive, Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

[illegible]

TD30551: Chain of Custody

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SGS Orlando, FL

SGS Sample Receipt Summary

Job Number: TD30551 **Client:** ALGC **Project:** PLYMOUTH TUBE
Date / Time Received: 11/16/2018 9:30:00 AM **Delivery Method:** FED EX **Airbill #'s:** 1001910562260003281100438035479552

Therm ID: IR 1; **Therm CF:** -0.2; **# of Coolers:** 1
Cooler Temps (Raw Measured) °C: Cooler 1: (3.6);
Cooler Temps (Corrected) °C: Cooler 1: (3.4);

Cooler Information

	<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification	<u>IR Gun</u>		
5. Cooler media	<u>Ice (Bag)</u>		

Trip Blank Information

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Information

	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Condition of sample	<u>Intact</u>			
5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7. VOCs have headspace	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____
 Test Strip Lot #s: pH 0-3 _____ 230315 _____
 Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____
 pH 10-12 _____ 219813A _____

Number of Lab Filtered Metals: _____
 Other: (Specify) _____

Comments

SM001
 Rev. Date 05/24/17

Technician: SHAYLAP

Date: 11/16/2018 9:30:00 A

Reviewer: _____

Date: _____

TD30551: Chain of Custody

Page 2 of 2

MS Volatiles

QC Data Summaries

(SGS Orlando, FL)

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD30551
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2059-MB	Z54582.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	99% 74-125%
2037-26-5	Toluene-D8	98% 88-111%

Blank Spike Summary

Job Number: TD30551
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2059-BS	Z54580.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	17.1	86	65-121

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	74-125%
2037-26-5	Toluene-D8	97%	88-111%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30551
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30551-1MS	Z54601.D	5	11/19/18	MM	n/a	n/a	VZ2059
TD30551-1MSD	Z54602.D	5	11/19/18	MM	n/a	n/a	VZ2059
TD30551-1	Z54583.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30551-1, TD30551-2, TD30551-3, TD30551-4, TD30551-5

CAS No.	Compound	TD30551-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	ND	100	91.6	92	100	93.7	94	2	65-121/27

CAS No.	Surrogate Recoveries	MS	MSD	TD30551-1	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	101%	101%	74-125%
2037-26-5	Toluene-D8	99%	98%	98%	88-111%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Haley & Aldrich

Plymouth Tube Groundwater Monitoring - 128159-003

128159-003

SGS Job Number: TD30631

Sampling Date: 11/14/18

Report to:


Haley & Aldrich, Inc.
400 W. Van Buren Street Suite 545
Phoenix, AZ 85004
btravers@haleyaldrich.com; rabrown@haleyaldrich.com

ATTN: Bruce Travers

Total number of pages in report: 71



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.


Richard Rodriguez
Laboratory Director

Client Service contact: Anita Patel 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628)
KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.



10165 Harwin Drive
Houston, TX 77036
Tel: 713-271-4700
www.accutest.com

Tuesday, November 27, 2018

Haley & Aldrich, Inc.
400 W. Van Buren Street Suite 545
Phoenix, AZ 85004

ATTN: Bruce Travers

RE: SGS Accutest Job TD30631 Reissue

Dear Mr. Travers:

The final report has been revised to include results for TCE for PT-3 and for 2,2-dichloropropane for PT-2S.

Please feel free to contact me if I can be of further assistance.

Sincerely,

Anita Patel

Anita Patel
Project Manager

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Sample Summary

Haley & Aldrich

Job No: TD30631

Plymouth Tube Groundwater Monitoring - 128159-003
Project No: 128159-003

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
TD30631-1	11/14/18	08:25	11/15/18	AQ	Ground Water	PT-3D-126-111418
TD30631-2	11/14/18	09:10	11/15/18	AQ	Ground Water	PT-3-90-111418
TD30631-3	11/14/18	10:45	11/15/18	AQ	Ground Water	PT-1S-90-111418
TD30631-4	11/14/18	11:45	11/15/18	AQ	Ground Water	PT-2S-90-111418
TD30631-5	11/14/18	12:50	11/15/18	AQ	Ground Water	LB-7R-90-111418
TD30631-6	11/14/18	10:45	11/15/18	AQ	Ground Water	PT-1S-90-111418 DUP
TD30631-7	11/14/18	09:43	11/15/18	AQ	Equipment Blank	ERB-111418
TD30631-8	11/14/18	00:00	11/15/18	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Haley & Aldrich **Job No** TD30631
Site: Plymouth Tube Groundwater Monitoring - 128159-003 **Report Date** 11/26/2018 2:10:44 P

7 Samples were collected on 11/14/2018 and received intact at SGS North America Inc (SGS) on 11/15/2018 and properly preserved in 1 cooler at 1.8 Deg C. The samples received an Accutest job number of TD30631. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.
Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ	Batch ID: F:VZ2059
-------------------	---------------------------

- All data for batch F:MS41951 was analyzed at SGS North America Inc. - Orlando, FL.

MS Volatiles By Method SW846 8260C

Matrix: AQ

Batch ID: VE3231

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD30318-1MS, TD30318-1MSD were used as the QC samples indicated.
- TD30631-4 for Trichloroethylene: AZ:D2

Matrix: AQ

Batch ID: VR1923

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD30451-2MS, TD30451-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Methyl bromide, Vinyl chloride are outside control limits.
- Matrix Spike Recovery(s) for Chloroethane, Methyl bromide, Methyl chloride, Vinyl chloride are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Chloroethane, Methyl chloride, Vinyl chloride are outside control limits. Probable cause due to matrix interference.
- TD30631-4 for Tetrachloroethylene: AZ:E4
- VR1923-BS for Methyl bromide: Outside control limits biased high.
- TD30631-1 for Vinyl chloride: AZ:V1
- TD30631-4 for Chloroethane: AZ:V1
- TD30631-1 for Methyl chloride: AZ:V1
- TD30631-7 for Chloroethane: AZ:V1
- TD30631-7 for Methyl bromide: AZ:V1
- TD30631-7 for Methyl chloride: AZ:V1
- TD30631-7 for Vinyl chloride: AZ:V1
- TD30631-8 for Acetone: AZ:V1
- TD30631-8 for Chloroethane: AZ:V1
- TD30631-8 for Methyl bromide: AZ:V1
- TD30631-8 for Methyl chloride: AZ:V1
- TD30631-8 for Vinyl chloride: AZ:V1
- TD30631-1 for Acetone: AZ:V1
- TD30631-1 for Chloroethane: AZ:V1
- VR1923-BS for Vinyl chloride: Outside control limits biased high.
- TD30631-4 for Methyl bromide: AZ:V1
- TD30631-2 for Acetone: AZ:V1
- TD30631-2 for Chloroethane: AZ:V1
- TD30631-2 for Methyl bromide: AZ:V1
- TD30631-2 for Methyl chloride: AZ:V1
- TD30631-2 for Vinyl chloride: AZ:V1
- TD30631-3 for Acetone: AZ:V1
- TD30631-3 for Chloroethane: AZ:V1
- TD30631-3 for Methyl bromide: AZ:V1
- TD30631-3 for Methyl chloride: AZ:V1
- TD30631-3 for Vinyl chloride: AZ:V1
- TD30631-4 for 1,1-Dichloroethane: AZ:E4

Monday, November 26, 2018

Page 2 of 3

MS Volatiles By Method SW846 8260C

Matrix: AQ

Batch ID: VR1923

- TD30631-4 for Chloroform: AZ:E4
- TD30631-7 for Acetone: AZ:V1
- TD30631-1 for Methyl bromide: AZ:V1
- TD30631-6 for Vinyl chloride: AZ:V1
- TD30631-4 for Methyl chloride: AZ:V1
- TD30631-4 for Vinyl chloride: AZ:V1
- TD30631-5 for Chloroethane: AZ:V1
- TD30631-5 for Methyl bromide: AZ:V1
- TD30631-5 for Methyl chloride: AZ:V1
- TD30631-5 for Vinyl chloride: AZ:V1
- TD30631-6 for Acetone: AZ:V1
- TD30631-6 for Chloroethane: AZ:V1
- TD30631-6 for Methyl bromide: AZ:V1
- TD30631-6 for Methyl chloride: AZ:V1
- TD30631-4 for Acetone: AZ:V1

Matrix: AQ

Batch ID: VZ6019

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD30245-5MS, TD30245-5MSD were used as the QC samples indicated.

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Houston, TX

Job No: TD30631

Site: HALDAZP: Plymouth Tube Groundwater Monitoring -

Report Date: 11/21/2018 1:22:12

6 Sample(s) were collected on 11/14/2018 and were received at SGS North America Inc - Orlando on 11/17/2018 properly preserved, at 1.1 Deg. C and intact. These Samples received an SGS Orlando job number of TD30631. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ

Batch ID: VZ2059

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) TD30551-1MS, TD30551-1MSD were used as the QC samples indicated.

TD30631-1 for 1,4-Dioxane: AZ:E4

TD30631-6 for 1,4-Dioxane: AZ:E4

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)

Summary of Hits

Job Number: TD30631
Account: Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003
Collected: 11/14/18

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
--------------------------	------------------	-----------------	----	-----	-------	--------

TD30631-1 PT-3D-126-111418

1,4-Dioxane ^a	0.37 J	1.0	0.30	ug/l	SW846 8260B BY SIM
--------------------------	--------	-----	------	------	--------------------

TD30631-2 PT-3-90-111418

1,4-Dioxane ^b	9.5	1.0	0.30	ug/l	SW846 8260B BY SIM
1,1-Dichloroethylene	32.3	1.0	0.36	ug/l	SW846 8260C
Trichloroethylene ^c	193	2.0	0.82	ug/l	SW846 8260C

TD30631-3 PT-1S-90-111418

1,4-Dioxane ^b	1.2	1.0	0.30	ug/l	SW846 8260B BY SIM
Trichloroethylene	1.3	1.0	0.41	ug/l	SW846 8260C

TD30631-4 PT-2S-90-111418

1,4-Dioxane ^b	47.0	1.0	0.30	ug/l	SW846 8260B BY SIM
Chloroform ^d	0.60 J	1.0	0.39	ug/l	SW846 8260C
1,1-Dichloroethane ^d	0.71 J	1.0	0.43	ug/l	SW846 8260C
1,1-Dichloroethylene	163	1.0	0.36	ug/l	SW846 8260C
Tetrachloroethylene ^d	0.40 J	1.0	0.37	ug/l	SW846 8260C
Trichloroethylene ^c	794	5.0	2.1	ug/l	SW846 8260C

TD30631-5 LB-7R-90-111418

1,4-Dioxane ^b	10.1	1.0	0.30	ug/l	SW846 8260B BY SIM
Acetone	11.2 J	50	10	ug/l	SW846 8260C
Trichloroethylene	86.9	1.0	0.41	ug/l	SW846 8260C

TD30631-6 PT-1S-90-111418 DUP

1,4-Dioxane ^a	0.33 J	1.0	0.30	ug/l	SW846 8260B BY SIM
Trichloroethylene	1.5	1.0	0.41	ug/l	SW846 8260C

TD30631-7 ERB-111418

No hits reported in this sample.

TD30631-8 TRIP BLANK

No hits reported in this sample.

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806 AZ:E4
(b) Analysis performed at SGS Orlando, FL. Cert# AZ0806

Summary of Hits

Job Number: TD30631
Account: Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003
Collected: 11/14/18



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

- (c) AZ:D2
- (d) AZ:E4



Houston, TX

Section 4

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	PT-3D-126-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-1	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479094.D	1	11/17/18 15:58	FI	n/a	n/a	VR1923
Run #2	Z71095.D	1	11/19/18 17:19	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-3D-126-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-1	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	98%	68-124%
2037-26-5	Toluene-D8	99%	102%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-3D-126-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-1	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	100%	72-126%

- (a) AZ: V1
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-3D-126-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-1	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54588.D	1	11/19/18 11:57	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^b	0.37	1.0	0.30	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%
2037-26-5	Toluene-D8	95%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806
(b) AZ:E4

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	PT-3-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479095.D	1	11/17/18 16:24	FI	n/a	n/a	VR1923
Run #2	E0072344.D	1	11/20/18 11:08	FT	n/a	n/a	VE3231
Run #3	E0072345.D	2	11/20/18 11:33	FT	n/a	n/a	VE3231

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml
Run #3	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	32.3	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-3-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene ^c	193 ^d	2.0	0.82	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
1868-53-7	Dibromofluoromethane	102%	98%	99%	72-122%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-3-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
17060-07-0	1,2-Dichloroethane-D4	115%	94%	95%	68-124%
2037-26-5	Toluene-D8	100%	101%	101%	80-119%
460-00-4	4-Bromofluorobenzene	104%	100%	98%	72-126%

- (a) AZ:V1
- (b) Result is from Run# 2
- (c) AZ:D2
- (d) Result is from Run# 3

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	PT-3-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-2	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54589.D	1	11/19/18 12:17	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	9.5	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	101%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479096.D	1	11/17/18 16:51	FI	n/a	n/a	VR1923
Run #2	Z71096.D	1	11/19/18 17:43	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	1.3	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	120%	97%	68-124%
2037-26-5	Toluene-D8	98%	102%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	101%	72-126%

- (a) AZ: V1
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-3	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54590.D	1	11/19/18 12:37	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.2	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		74-125%
2037-26-5	Toluene-D8	97%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID:	PT-2S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479097.D	1	11/17/18 17:17	FI	n/a	n/a	VR1923
Run #2	E0072346.D	1	11/20/18 11:57	FT	n/a	n/a	VE3231
Run #3	E0072347.D	5	11/20/18 12:22	FT	n/a	n/a	VE3231

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml
Run #3	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform ^b	0.60	1.0	0.39	ug/l	J
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane ^b	0.71	1.0	0.43	ug/l	J
75-35-4	1,1-Dichloroethylene	163	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^c	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-2S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene ^b	0.40	1.0	0.37	ug/l	J
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene ^d	794 ^e	5.0	2.1	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
1868-53-7	Dibromofluoromethane	102%	100%	99%	72-122%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-2S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
17060-07-0	1,2-Dichloroethane-D4	119%	96%	96%	68-124%
2037-26-5	Toluene-D8	101%	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	104%	100%	98%	72-126%

- (a) AZ:V1
- (b) AZ:E4
- (c) Result is from Run# 2
- (d) AZ:D2
- (e) Result is from Run# 3

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	PT-2S-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-4	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54591.D	1	11/19/18 12:57	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	47.0	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	101%		74-125%
2037-26-5	Toluene-D8	97%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-7R-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479098.D	1	11/17/18 17:44	FI	n/a	n/a	VR1923
Run #2	Z71097.D	1	11/19/18 18:08	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	11.2 ^a	50	10	ug/l	J
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^a	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-7R-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^b	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^b	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	86.9	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^b	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	121%	97%	68-124%
2037-26-5	Toluene-D8	96%	97%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-7R-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	99%	72-126%

(a) Result is from Run# 2
(b) AZ:V1

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	LB-7R-90-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-5	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54600.D	1	11/19/18 16:04	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	10.1	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	99%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418 DUP	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479099.D	1	11/17/18 18:10	FI	n/a	n/a	VR1923
Run #2	Z71098.D	1	11/19/18 18:32	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418 DUP	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	1.5	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	120%	97%	68-124%
2037-26-5	Toluene-D8	99%	103%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-1S-90-111418 DUP	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	100%	72-126%

- (a) AZ: V1
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	PT-1S-90-111418 DUP	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-6	Date Received:	11/15/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54599.D	1	11/19/18 15:44	AFL	n/a	n/a	F:VZ2059
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^b	0.33	1.0	0.30	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

(b) AZ:E4

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479085.D	1	11/17/18 11:58	FI	n/a	n/a	VR1923
Run #2	Z71099.D	1	11/19/18 18:57	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	117%	99%	68-124%
2037-26-5	Toluene-D8	101%	102%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111418	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-7	Date Received:	11/15/18
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	100%	72-126%

- (a) AZ: V1
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-8	Date Received:	11/15/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R03479086.D	1	11/17/18 12:25	FI	n/a	n/a	VR1923
Run #2	Z71093.D	1	11/19/18 16:30	FT	n/a	n/a	VZ6019

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND ^b	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-8	Date Received:	11/15/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide ^a	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride ^a	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	95%	72-122%
17060-07-0	1,2-Dichloroethane-D4	117%	98%	68-124%
2037-26-5	Toluene-D8	99%	102%	80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/14/18
Lab Sample ID:	TD30631-8	Date Received:	11/15/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	100%	72-126%

- (a) AZ: V1
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Arizona Qualifiers
- Chain of Custody

Arizona Qualifiers

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

The following Arizona qualifiers have been applied to data and/or QC in this report.

Qual	Description
D2	Sample required dilution due to high concentration of target analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

5.1
5

SGS North America Inc. - Houston
10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

[illegible]



COOLER TEMP FORM

TC#

TD30631

Delivered by (circle one):

☒ FedEx/UPS

ALGC Driver

Client

Date:

11-15-18

Client:

HASLEY

Cooler Number:

1

Thermometer ID:

DR3

CF, °C

0

Corrected Temp, °C

1.8

SAMPLES CONTAINED IN COOLER

7737 2908 0125

SM027
Rev. 7
1/3/18

SGS Sample Receipt Summary

Page 1 of 3

Job Number: TD30631 **Client:** HALEY AND ALDRICH **Project:** PLYMOTH TUBE
Date / Time Received: _____ **Delivery Method:** _____ **Airbill #'s:** 773729080125
No. Coolers: 1 **Therm ID:** IR-3; **Temp Adjustment Factor:** 0;
Cooler Temps (Initial/Adjusted): #1: (1.8/1.8);

Cooler Security		<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature		<u>Y or N</u>			
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
2. Cooler temp verification:	_____				
3. Cooler media:	Ice (Bag)				
Quality Control Preservation	<u>Y or N</u>		<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Sample Integrity - Documentation	<u>Y or N</u>		
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample Integrity - Condition	<u>Y or N</u>		
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	Intact		
Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>	
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

TD30631: Chain of Custody
 Page 3 of 5

Sample Receipt Log

Page 2 of 3

Job #: TD30631

Date / Time Received: 11/15/2018 11:30:00 AM

Initials: bg

Client: HALEY AND ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30631-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-4	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8

5.2
5

TD30631: Chain of Custody

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Sample Receipt Log

Page 3 of 3

Job #: TD30631

Date / Time Received: 11/15/2018 11:30:00 AM

Initials: bg

Client: HALEY AND ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30631-4	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-5	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
1	TD30631-6	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-3	1.8	0	1.8
	TD30631-7	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD30631-7	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD30631-7	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD30631-8	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				
	TD30631-8	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.				

5.2
5

TD30631: Chain of Custody

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MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 3

Job Number: TD30631**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-MB	R03479083.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	

Method Blank Summary

Page 2 of 3

Job Number: TD30631**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-MB	R03479083.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Result	RL	MDL	Units	Q
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	100% 72-122%
17060-07-0	1,2-Dichloroethane-D4	112% 68-124%
2037-26-5	Toluene-D8	100% 80-119%

Method Blank Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-MB	R03479083.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	100% 72-126%

Method Blank Summary

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Job Number: TD30631

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6019-MB	Z71078.D	1	11/19/18	FT	n/a	n/a	VZ6019

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30631-1, TD30631-3, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	96% 72-122%
17060-07-0	1,2-Dichloroethane-D4	98% 68-124%
2037-26-5	Toluene-D8	105% 80-119%
460-00-4	4-Bromofluorobenzene	100% 72-126%

Method Blank Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-MB	E0072343.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-2, TD30631-4

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	97% 72-122%
17060-07-0	1,2-Dichloroethane-D4	94% 68-124%
2037-26-5	Toluene-D8	99% 80-119%
460-00-4	4-Bromofluorobenzene	99% 72-126%

Blank Spike Summary

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Job Number: TD30631**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-BS	R03479079.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	140	112	46-129
71-43-2	Benzene	25	22.4	90	68-119
108-86-1	Bromobenzene	25	22.3	89	71-119
74-97-5	Bromochloromethane	25	22.3	89	71-118
75-27-4	Bromodichloromethane	25	25.0	100	72-118
75-25-2	Bromoform	25	22.5	90	54-123
104-51-8	n-Butylbenzene	25	23.8	95	66-123
135-98-8	sec-Butylbenzene	25	23.5	94	72-123
98-06-6	tert-Butylbenzene	25	24.1	96	70-124
108-90-7	Chlorobenzene	25	22.6	90	74-120
75-00-3	Chloroethane	25	31.1	124	61-132
67-66-3	Chloroform	25	24.1	96	73-122
95-49-8	o-Chlorotoluene	25	22.8	91	71-122
106-43-4	p-Chlorotoluene	25	23.2	93	73-120
75-15-0	Carbon disulfide	25	25.6	102	55-140
56-23-5	Carbon tetrachloride	25	23.8	95	68-133
75-34-3	1,1-Dichloroethane	25	23.3	93	72-121
75-35-4	1,1-Dichloroethylene	25	29.2	117	67-140
563-58-6	1,1-Dichloropropene	25	25.3	101	73-130
96-12-8	1,2-Dibromo-3-chloropropane	25	21.5	86	47-133
106-93-4	1,2-Dibromoethane	25	23.5	94	69-121
107-06-2	1,2-Dichloroethane	25	24.6	98	68-121
78-87-5	1,2-Dichloropropane	25	22.9	92	72-116
142-28-9	1,3-Dichloropropane	25	22.8	91	70-118
124-48-1	Dibromochloromethane	25	24.1	96	68-119
75-71-8	Dichlorodifluoromethane	25	25.6	102	29-182
156-59-2	cis-1,2-Dichloroethylene	25	22.0	88	72-117
10061-01-5	cis-1,3-Dichloropropene	25	21.5	86	71-118
541-73-1	m-Dichlorobenzene	25	22.6	90	73-117
95-50-1	o-Dichlorobenzene	25	22.1	88	71-117
106-46-7	p-Dichlorobenzene	25	21.4	86	71-116
156-60-5	trans-1,2-Dichloroethylene	25	25.6	102	68-124
10061-02-6	trans-1,3-Dichloropropene	25	24.1	96	72-127
100-41-4	Ethylbenzene	25	23.6	94	71-117
637-92-3	Ethyl tert-Butyl Ether	25	21.5	86	66-122
591-78-6	2-Hexanone	125	122	98	49-124

* = Outside of Control Limits.

Blank Spike Summary

Page 2 of 3

Job Number: TD30631

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-BS	R03479079.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
87-68-3	Hexachlorobutadiene	25	22.5	90	62-143
98-82-8	Isopropylbenzene	25	24.4	98	74-141
99-87-6	p-Isopropyltoluene	25	22.9	92	72-126
108-10-1	4-Methyl-2-pentanone	125	121	97	54-122
74-83-9	Methyl bromide	25	44.2	177* a	53-138
74-87-3	Methyl chloride	25	35.6	142	50-145
74-95-3	Methylene bromide	25	22.3	89	71-117
75-09-2	Methylene chloride	25	25.8	103	60-125
78-93-3	Methyl ethyl ketone	125	118	94	51-129
1634-04-4	Methyl Tert Butyl Ether	25	25.6	102	65-119
91-20-3	Naphthalene	25	21.5	86	43-139
103-65-1	n-Propylbenzene	25	23.0	92	72-123
100-42-5	Styrene	25	23.9	96	74-119
75-65-0	Tert Butyl Alcohol	250	256	102	35-146
630-20-6	1,1,1,2-Tetrachloroethane	25	23.3	93	74-119
71-55-6	1,1,1-Trichloroethane	25	24.6	98	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	23.4	94	62-121
79-00-5	1,1,2-Trichloroethane	25	22.7	91	70-119
87-61-6	1,2,3-Trichlorobenzene	25	21.1	84	44-144
96-18-4	1,2,3-Trichloropropane	25	22.6	90	61-124
120-82-1	1,2,4-Trichlorobenzene	25	21.2	85	57-132
95-63-6	1,2,4-Trimethylbenzene	25	22.7	91	70-121
108-67-8	1,3,5-Trimethylbenzene	25	23.3	93	66-119
127-18-4	Tetrachloroethylene	25	21.7	87	72-132
108-88-3	Toluene	25	22.2	89	73-119
79-01-6	Trichloroethylene	25	23.5	94	73-121
75-69-4	Trichlorofluoromethane	25	32.9	132	46-152
75-01-4	Vinyl chloride	25	36.7	147* a	54-126
1330-20-7	Xylene (total)	75	71.2	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	72-122%
17060-07-0	1,2-Dichloroethane-D4	111%	68-124%
2037-26-5	Toluene-D8	100%	80-119%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR1923-BS	R03479079.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	102%	72-126%

(a) Outside control limits biased high.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6019-BS	Z71075.D	1	11/19/18	FT	n/a	n/a	VZ6019

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-1, TD30631-3, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	109	87	46-129
594-20-7	2,2-Dichloropropane	25	23.6	94	57-141

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	100%	68-124%
2037-26-5	Toluene-D8	101%	80-119%
460-00-4	4-Bromofluorobenzene	98%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-BS	E0072340.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-2, TD30631-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
594-20-7	2,2-Dichloropropane	25	24.8	99	57-141
79-01-6	Trichloroethylene	25	23.7	95	73-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	92%	68-124%
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: TD30631

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30451-2MS	R03479089.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2MSD	R03479090.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2	R03479088.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	TD30451-2 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50 U	125	128	102	125	129	103	1	46-129/25
71-43-2	Benzene	1.0 U	25	21.2	85	25	20.5	82	3	68-119/12
108-86-1	Bromobenzene	1.0 U	25	21.8	87	25	20.2	81	8	71-119/12
74-97-5	Bromochloromethane	1.0 U	25	21.6	86	25	20.7	83	4	71-118/13
75-27-4	Bromodichloromethane	1.0 U	25	23.3	93	25	22.9	92	2	72-118/16
75-25-2	Bromoform	1.0 U	25	20.3	81	25	19.8	79	2	54-123/17
104-51-8	n-Butylbenzene	1.0 U	25	24.2	97	25	22.5	90	7	66-123/14
135-98-8	sec-Butylbenzene	1.0 U	25	23.2	93	25	21.7	87	7	72-123/13
98-06-6	tert-Butylbenzene	1.0 U	25	24.3	97	25	22.6	90	7	70-124/15
108-90-7	Chlorobenzene	1.0 U	25	21.1	84	25	20.1	80	5	74-120/12
75-00-3	Chloroethane	1.0 U	25	45.5	182*	25	40.0	160*	13	61-132/16
67-66-3	Chloroform	1.0 U	25	23.1	92	25	22.4	90	3	73-122/13
95-49-8	o-Chlorotoluene	1.0 U	25	22.7	91	25	21.3	85	6	71-122/12
106-43-4	p-Chlorotoluene	1.0 U	25	23.0	92	25	22.0	88	4	73-120/12
75-15-0	Carbon disulfide	5.0 U	25	25.2	101	25	24.3	97	4	55-140/24
56-23-5	Carbon tetrachloride	1.0 U	25	21.9	88	25	22.0	88	0	68-133/20
75-34-3	1,1-Dichloroethane	1.0 U	25	22.0	88	25	21.6	86	2	72-121/14
75-35-4	1,1-Dichloroethylene	1.0 U	25	29.3	117	25	27.3	109	7	67-140/18
563-58-6	1,1-Dichloropropene	1.0 U	25	25.6	102	25	24.4	98	5	73-130/15
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	25	21.0	84	25	20.0	80	5	47-133/23
106-93-4	1,2-Dibromoethane	1.0 U	25	21.6	86	25	20.4	82	6	69-121/13
107-06-2	1,2-Dichloroethane	23.2	25	48.8	102	25	46.5	93	5	68-121/12
78-87-5	1,2-Dichloropropane	1.0 U	25	20.8	83	25	20.3	81	2	72-116/12
142-28-9	1,3-Dichloropropane	1.0 U	25	21.7	87	25	20.8	83	4	70-118/12
124-48-1	Dibromochloromethane	1.0 U	25	21.7	87	25	21.4	86	1	68-119/15
75-71-8	Dichlorodifluoromethane	2.0 U	25	26.9	108	25	26.3	105	2	29-182/23
156-59-2	cis-1,2-Dichloroethylene	1.0 U	25	20.8	83	25	19.7	79	5	72-117/13
10061-01-5	cis-1,3-Dichloropropene	1.0 U	25	21.0	84	25	20.7	83	1	71-118/18
541-73-1	m-Dichlorobenzene	1.0 U	25	22.4	90	25	21.3	85	5	73-117/12
95-50-1	o-Dichlorobenzene	1.0 U	25	22.1	88	25	20.7	83	7	71-117/11
106-46-7	p-Dichlorobenzene	1.0 U	25	21.4	86	25	19.9	80	7	71-116/11
156-60-5	trans-1,2-Dichloroethylene	1.0 U	25	26.0	104	25	24.8	99	5	68-124/15
10061-02-6	trans-1,3-Dichloropropene	1.0 U	25	22.5	90	25	22.3	89	1	72-127/17
100-41-4	Ethylbenzene	1.0 U	25	22.5	90	25	21.3	85	5	71-117/12
637-92-3	Ethyl tert-Butyl Ether	1.0 U	25	20.3	81	25	19.9	80	2	66-122/12
591-78-6	2-Hexanone	10 U	125	111	89	125	108	86	3	49-124/21

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: TD30631

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30451-2MS	R03479089.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2MSD	R03479090.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2	R03479088.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	TD30451-2 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	1.0 U	25	23.2	93	25	21.6	86	7	62-143/18
98-82-8	Isopropylbenzene	1.0 U	25	24.1	96	25	22.8	91	6	74-141/13
99-87-6	p-Isopropyltoluene	1.0 U	25	22.8	91	25	21.4	86	6	72-126/13
108-10-1	4-Methyl-2-pentanone	10 U	125	114	91	125	111	89	3	54-122/20
74-83-9	Methyl bromide	1.0 U	25	37.6	150*	25	33.5	134	12	53-138/16
74-87-3	Methyl chloride	1.0 U	25	37.1	148*	25	36.4	146*	2	50-145/17
74-95-3	Methylene bromide	1.0 U	25	21.7	87	25	21.5	86	1	71-117/12
75-09-2	Methylene chloride	5.0 U	25	25.0	100	25	25.0	100	0	60-125/16
78-93-3	Methyl ethyl ketone	10 U	125	108	86	125	106	85	2	51-129/22
1634-04-4	Methyl Tert Butyl Ether	1.0 U	25	24.9	100	25	24.9	100	0	65-119/13
91-20-3	Naphthalene	5.0 U	25	20.7	83	25	19.7	79	5	43-139/28
103-65-1	n-Propylbenzene	1.0 U	25	23.1	92	25	21.4	86	8	72-123/13
100-42-5	Styrene	1.0 U	25	22.3	89	25	21.7	87	3	74-119/19
75-65-0	Tert Butyl Alcohol	20 U	250	240	96	250	241	96	0	35-146/35
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U	25	21.9	88	25	21.2	85	3	74-119/14
71-55-6	1,1,1-Trichloroethane	1.0 U	25	22.8	91	25	23.1	92	1	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U	25	23.3	93	25	22.4	90	4	62-121/17
79-00-5	1,1,2-Trichloroethane	1.0 U	25	21.6	86	25	20.8	83	4	70-119/13
87-61-6	1,2,3-Trichlorobenzene	1.0 U	25	21.3	85	25	20.0	80	6	44-144/27
96-18-4	1,2,3-Trichloropropane	1.0 U	25	22.1	88	25	20.9	84	6	61-124/16
120-82-1	1,2,4-Trichlorobenzene	1.0 U	25	21.4	86	25	20.5	82	4	57-132/18
95-63-6	1,2,4-Trimethylbenzene	1.0 U	25	22.8	91	25	21.2	85	7	70-121/15
108-67-8	1,3,5-Trimethylbenzene	1.0 U	25	23.3	93	25	21.4	86	9	66-119/15
127-18-4	Tetrachloroethylene	1.0 U	25	20.3	81	25	20.0	80	1	72-132/14
108-88-3	Toluene	1.0 U	25	20.5	82	25	19.8	79	3	73-119/13
79-01-6	Trichloroethylene	1.0 U	25	22.3	89	25	21.3	85	5	73-121/13
75-69-4	Trichlorofluoromethane	1.0 U	25	35.4	142	25	34.6	138	2	46-152/25
75-01-4	Vinyl chloride	1.0 U	25	38.1	152*	25	38.5	154*	1	54-126/17
1330-20-7	Xylene (total)	1.0 U	75	68.0	91	75	64.6	86	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30451-2	Limits
1868-53-7	Dibromofluoromethane	106%	106%	104%	72-122%
17060-07-0	1,2-Dichloroethane-D4	116%	113%	119%	68-124%
2037-26-5	Toluene-D8	98%	98%	98%	80-119%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30451-2MS	R03479089.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2MSD	R03479090.D	1	11/17/18	FI	n/a	n/a	VR1923
TD30451-2	R03479088.D	1	11/17/18	FI	n/a	n/a	VR1923

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Surrogate Recoveries	MS	MSD	TD30451-2	Limits
460-00-4	4-Bromofluorobenzene	105%	101%	101%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30245-5MS	Z71089.D	20	11/19/18	FT	n/a	n/a	VZ6019
TD30245-5MSD	Z71090.D	20	11/19/18	FT	n/a	n/a	VZ6019
TD30245-5	Z71086.D	20	11/19/18	FT	n/a	n/a	VZ6019
TD30245-5	Z71091.D	50	11/19/18	FT	n/a	n/a	VZ6019

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-1, TD30631-3, TD30631-5, TD30631-6, TD30631-7, TD30631-8

CAS No.	Compound	TD30245-5 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	2500	2150	86	2500	2130	85	1	46-129/25
594-20-7	2,2-Dichloropropane	ND	500	406	81	500	392	78	4	57-141/16

CAS No.	Surrogate Recoveries	MS	MSD	TD30245-5	TD30245-5	Limits
1868-53-7	Dibromofluoromethane	99%	99%	96%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	95%	94%	100%	96%	68-124%
2037-26-5	Toluene-D8	100%	101%	103%	102%	80-119%
460-00-4	4-Bromofluorobenzene	97%	97%	99%	100%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30631
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30318-1MS	E0072352.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1MSD	E0072353.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1	E0072350.D	25	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C

TD30631-2, TD30631-4

CAS No.	Compound	TD30318-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	625	643	103	625	618	99	4	57-141/16
79-01-6	Trichloroethylene	2380	625	2990	98	625	2900	83	3	73-121/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30318-1	Limits
1868-53-7	Dibromofluoromethane	98%	96%	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	94%	94%	96%	68-124%
2037-26-5	Toluene-D8	100%	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	98%	72-126%

* = Outside of Control Limits.

Misc. Forms

Custody Documents and Other Forms

(SGS Orlando, FL)

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

Page 1 of 1

10165 Harwin Drive, Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

FED-EX Tracking #		Bottle Order Control #														
SGS Quote #		SGS Job # TD30631														
Client / Reporting Information		Project Information														
Company Name: SGS North America Inc.		Project Name: Plymouth Tube Groundwater Monitoring - 128129-003														
Street Address: 10165 Harwin Drive		Billing Information (if different from Report to)														
City: Houston State: TX Zip: 77036		Company Name														
Project Contact: sylvia.garza@sgs.com		Street Address														
Phone #: 713-271-4700		City: State: Zip:														
Fax #		Client Purchase Order #														
Sampler(s) Name(s)		Project Manager														
Phone		Attention:														
Collection		Number of preserved Bottles														
SSS Sample #	Field ID / Point of Collection	MECHDI Vial #	Date	Time	Sampled by	Matrix	# of bottles	PCB	Nickel	PHOS	IN204	INONE	ID Water	MECH	ENCORE	LAB USE ONLY
1	PT-3D-128-111418		11/14/18	8:25:00 AM	AQ											X
2	PT-3-90-111418		11/14/18	9:10:00 AM	AQ											X
3	PT-1S-90-111418		11/14/18	10:45:00 AM	AQ											X
4	PT-2S-90-111418		11/14/18	11:45:00 AM	AQ											X
5	LB-7R-90-111418		11/14/18	12:50:00 PM	AQ											X
6	PT-1S-90-111418		11/14/18	10:45:00 AM	AQ											X
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions												
<input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input checked="" type="checkbox"/> other Due 11/26/2018 Emergency & Rush T/A data available VIA Lablink		Approved By (SGS PM): / Date: _____ _____ _____ _____ _____ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		Sub 3, 40ml HCL Vials to FL												
Relinquished by Sampler: [Signature]		Received By: 1 [Signature]		Relinquished By: 2 [Signature]												
Relinquished by Sampler: [Signature]		Received By: 3 [Signature]		Relinquished By: 4 [Signature]												
Relinquished by: [Signature]		Received By: 5 [Signature]		Custody Seal # [Signature]												
				Intact <input type="checkbox"/> Not intact <input type="checkbox"/>												
				Preserved where applicable <input type="checkbox"/>												
				On ice <input type="checkbox"/> Cooler Temp. 11												

TD30631: Chain of Custody

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SGS Orlando, FL



SGS Sample Receipt Summary

Job Number: TD30631 **Client:** SGS TX **Project:** PLYMOUTH TUBE
Date / Time Received: 11/17/2018 9:30:00 AM **Delivery Method:** FX **Airbill #s:** 1001893362410003281100438035479600

Therm ID: IR 1; **Therm CF:** -0.2; **# of Coolers:** 1
Cooler Temps (Raw Measured) °C: Cooler 1: (1.3);
Cooler Temps (Corrected) °C: Cooler 1: (1.1);

Cooler Information

	Y	or	N
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information

	Y	or	N	N/A
1. Trip Blank present / cooler	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	W	or	S	N/A
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Information

	Y	or	N	N/A
1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Condition of sample	Intact			
5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7. VOCs have headspace	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #s: pH 0-3 _____ 230315 _____ pH 10-12 _____ 219813A _____ Other: (Specify) _____
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001 Technician: PETERH Date: 11/17/2018 9:30:00 A Reviewer: _____ Date: _____
 Rev. Date 05/24/17

TD30631: Chain of Custody

Page 2 of 2

MS Volatiles

QC Data Summaries

(SGS Orlando, FL)

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD30631
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2059-MB	Z54582.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	99% 74-125%
2037-26-5	Toluene-D8	98% 88-111%

8.1.1
8

Blank Spike Summary

Job Number: TD30631
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2059-BS	Z54580.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	17.1	86	65-121

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	74-125%
2037-26-5	Toluene-D8	97%	88-111%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30631
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30551-1MS	Z54601.D	5	11/19/18	MM	n/a	n/a	VZ2059
TD30551-1MSD	Z54602.D	5	11/19/18	MM	n/a	n/a	VZ2059
TD30551-1	Z54583.D	1	11/19/18	MM	n/a	n/a	VZ2059

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30631-1, TD30631-2, TD30631-3, TD30631-4, TD30631-5, TD30631-6

CAS No.	Compound	TD30551-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	ND	100	91.6	92	100	93.7	94	2	65-121/27

CAS No.	Surrogate Recoveries	MS	MSD	TD30551-1	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	101%	101%	74-125%
2037-26-5	Toluene-D8	99%	98%	98%	88-111%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Haley & Aldrich

Plymouth Tube Groundwater Monitoring - 128159-003

128159-003

SGS Job Number: TD30690

Sampling Date: 11/15/18

Report to:


Haley & Aldrich, Inc.
400 W. Van Buren Street Suite 545
Phoenix, AZ 85004
btravers@haleyaldrich.com; rabrown@haleyaldrich.com

ATTN: Bruce Travers

Total number of pages in report: 62



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.


Richard Rodriguez
Laboratory Director

Client Service contact: Anita Patel 713-271-4700

Certifications: TX (T104704220-18-30) AR (14-016-0) AZ (AZ0769) FL (E87628)
KS (E-10366) LA (85695/04004) NJ (TX010) OK (2018-129) VA (8999)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

Haley & Aldrich

Job No: TD30690

Plymouth Tube Groundwater Monitoring - 128159-003
Project No: 128159-003

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
TD30690-1	11/15/18	08:45	11/16/18	AQ	Ground Water	PT-6D-165-111518
TD30690-2	11/15/18	09:35	11/16/18	AQ	Ground Water	LB-13-124-111518
TD30690-3	11/15/18	10:55	11/16/18	AQ	Ground Water	LB-17-138-111518
TD30690-4	11/15/18	12:10	11/16/18	AQ	Ground Water	LB-1-88-111518
TD30690-5	11/15/18	00:00	11/16/18	AQ	Ground Water	ERB-111518
TD30690-6	11/15/18	00:00	11/16/18	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Haley & Aldrich

Job No TD30690

Site: Plymouth Tube Groundwater Monitoring - 128159-003

Report Date 11/26/2018 5:25:27 P

5 Samples were collected on 11/15/2018 and received intact at SGS North America Inc (SGS) on 11/16/2018 and properly preserved in 1 cooler at 1.4 Deg C. The samples received an Accutest job number of TD30690. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ

Batch ID: F:VZ2060

- All data for batch F:MS41976 was analyzed at SGS North America Inc. - Orlando, FL.

MS Volatiles By Method SW846 8260C

Matrix: AQ

Batch ID: VE3231

- All samples were analyzed within the recommended method holding time.
- Sample(s) TD30318-1MS, TD30318-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Methyl chloride are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for cis-1,2-Dichloroethylene are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- TD30690-3 for Tetrachloroethylene: AZ:E4
- TD30690-3 for 1,1-Dichloroethylene: AZ:E4
- TD30690-3 for Bromoform: Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1
- TD30690-4 for Bromoform: Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1
- TD30690-5 for Bromoform: Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1
- TD30690-6 for Bromoform: Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1

Matrix: AQ

Batch ID: VZ6025

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD30705-1MS, TD30705-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Dichlorodifluoromethane, Tetrachloroethylene are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Dichlorodifluoromethane, Tetrachloroethylene are outside control limits. Probable cause due to matrix interference.
- TD30690-2 for 1,1-Dichloroethylene: AZ:E4

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Monday, November 26, 2018

Page 1 of 1

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Houston, TX

Job No: TD30690

Site: HALDAZP: Plymouth Tube Groundwater Monitoring -

Report Date: 11/26/2018 5:50:11

4 Sample(s) were collected on 11/15/2018 and were received at SGS North America Inc - Orlando on 11/20/2018 properly preserved, at 3.8 Deg. C and intact. These Samples received an SGS Orlando job number of TD30690. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B BY SIM

Matrix: AQ

Batch ID: VZ2060

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) TD30690-1MS, TD30690-1MSD were used as the QC samples indicated.

TD30690-2 for 1,4-Dioxane: AZ:E4

TD30690-3 for 1,4-Dioxane: AZ:E4

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)

Summary of Hits

Page 1 of 1

Job Number: TD30690
Account: Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003
Collected: 11/15/18



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
--------------------------	------------------	-----------------	----	-----	-------	--------

TD30690-1 PT-6D-165-111518

Trichloroethylene	1.3	1.0	0.41	ug/l	SW846 8260C
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TD30690-2 LB-13-124-111518

1,4-Dioxane ^a	0.58 J	1.0	0.30	ug/l	SW846 8260B BY SIM
1,1-Dichloroethylene ^b	0.54 J	1.0	0.36	ug/l	SW846 8260C
Trichloroethylene	3.3	1.0	0.41	ug/l	SW846 8260C

TD30690-3 LB-17-138-111518

1,4-Dioxane ^a	0.42 J	1.0	0.30	ug/l	SW846 8260B BY SIM
1,1-Dichloroethylene ^b	0.73 J	1.0	0.36	ug/l	SW846 8260C
Tetrachloroethylene ^b	0.50 J	1.0	0.37	ug/l	SW846 8260C
Trichloroethylene	2.1	1.0	0.41	ug/l	SW846 8260C

TD30690-4 LB-1-88-111518

1,4-Dioxane ^c	1.3	1.0	0.30	ug/l	SW846 8260B BY SIM
Trichloroethylene	21.1	1.0	0.41	ug/l	SW846 8260C

TD30690-5 ERB-111518

No hits reported in this sample.

TD30690-6 TRIP BLANK

No hits reported in this sample.

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806 AZ:E4

(b) AZ:E4

(c) Analysis performed at SGS Orlando, FL. Cert# AZ0806

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	PT-6D-165-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-1	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71203.D	1	11/21/18 15:00	FT	n/a	n/a	VZ6025
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-6D-165-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-1	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	1.3	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		72-122%
17060-07-0	1,2-Dichloroethane-D4	95%		68-124%
2037-26-5	Toluene-D8	100%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PT-6D-165-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-1	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		72-126%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	PT-6D-165-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-1	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54621.D	1	11/21/18 14:52	AFL	n/a	n/a	F:VZ2060
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%		
2037-26-5	Toluene-D8	96%		88-111%		

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-13-124-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-2	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z71204.D	1	11/21/18 15:25	FT	n/a	n/a	VZ6025
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene ^a	0.54	1.0	0.36	ug/l	J
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-13-124-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-2	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	3.3	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		72-122%
17060-07-0	1,2-Dichloroethane-D4	96%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-13-124-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-2	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		72-126%

(a) AZ:E4

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	LB-13-124-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-2	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54622.D	1	11/21/18 15:12	AFL	n/a	n/a	F:VZ2060
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^b	0.58	1.0	0.30	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%
2037-26-5	Toluene-D8	99%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

(b) AZ:E4

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-17-138-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-3	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072359.D	1	11/20/18 17:15	FT	n/a	n/a	VE3231
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform ^a	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene ^b	0.73	1.0	0.36	ug/l	J
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-17-138-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-3	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene ^b	0.50	1.0	0.37	ug/l	J
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	2.1	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	101%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-17-138-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-3	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		72-126%

(a) Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1
(b) AZ:E4

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	LB-17-138-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-3	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54623.D	1	11/21/18 15:32	AFL	n/a	n/a	F:VZ2060
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^b	0.42	1.0	0.30	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	102%		74-125%
2037-26-5	Toluene-D8	100%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

(b) AZ:E4

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-1-88-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-4	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072360.D	1	11/20/18 17:40	FT	n/a	n/a	VE3231
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform ^a	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-1-88-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-4	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	21.1	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	100%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LB-1-88-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-4	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		72-126%

(a) Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID:	LB-1-88-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-4	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B BY SIM		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	Z54624.D	1	11/21/18 15:52	AFL	n/a	n/a	F:VZ2060
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.3	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	100%		88-111%

(a) Analysis performed at SGS Orlando, FL. Cert# AZ0806

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-5	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072361.D	1	11/20/18 18:05	FT	n/a	n/a	VE3231
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform ^a	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-5	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-122%
17060-07-0	1,2-Dichloroethane-D4	99%		68-124%
2037-26-5	Toluene-D8	100%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ERB-111518	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-5	Date Received:	11/16/18
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%		72-126%

(a) Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-6	Date Received:	11/16/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0072362.D	1	11/20/18 18:29	FT	n/a	n/a	VE3231
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform ^a	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-6	Date Received:	11/16/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-122%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	100%		80-119%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	11/15/18
Lab Sample ID:	TD30690-6	Date Received:	11/16/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Plymouth Tube Groundwater Monitoring - 128159-003		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		72-126%

(a) Associated CCV outside of control limits low. Low check standard confirms detectability. AZ:V9,N1

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Arizona Qualifiers
- Chain of Custody

Arizona Qualifiers

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

The following Arizona qualifiers have been applied to data and/or QC in this report.

Qual	Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
N1	See case narrative.
V9	CCV recovery was below method acceptance limits.

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SGS

PHOENIX

CHAIN OF CUSTODY

SGS North America Inc. - Houston
10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com/ehsusa

PAGE 1 OF 1

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes	
Company Name Haley + Aldrich		Project Name Plymouth Tube					
Street Address 400 Evan Buena St		Street W. Willis					
City Phoenix		City Chandler					
State AZ		State AZ					
Zip 85004		Zip 85004					
Project Contact Bruce Travers		Project # 128159-003					
E-mail		Client Purchase Order #					
Phone # 480-244-5891		City		State		Zip	
Sampler(s) Name(s) S. Hagedorn + E. Fredrickson		Project Manager		Attention:			
SGS Sample #		Collection		Number of preserved Bottles			
Field ID / Point of Collection		Date	Time	Sampled By	Matrix	# of bottles	
1	PT-67-165-111518	11/15/18	0845	SH+EF	GW	6	
2	LB-13-124-111518		0935			6	
3	LB-17-138-111518		1055			6	
4	LB-1-88-111518		1210			6	
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions			
<input checked="" type="checkbox"/> Standard 10 Business Days <input type="checkbox"/> 5 Business Days RUSH <input type="checkbox"/> 4 Business Days RUSH <input type="checkbox"/> 3 Business Days RUSH <input type="checkbox"/> 2 Business Days RUSH <input type="checkbox"/> 1 Business Day EMERGENCY Emergency & Rush TIA data available via Lablink. Approval needed for RUSH/Emergency TAT		Approved By (SGS PM) / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC Summary + Partial Raw Data		<input type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	
Sample Custody must be documented below each time samples change possession, including courier delivery.							
Relinquished By: 1	Date / Time: 11/15/18 1400	Received By: 1	Date / Time: 11/15/18 1400	Relinquished By: 2	Date / Time: 11/15/18 1600	Received By: 2	Date / Time: 11/15/18 1600
Relinquished By: 3	Date / Time: 11-16-18 1250	Received By: 3	Date / Time: 11-16-18 1250	Relinquished By: 4	Date / Time: 11-16-18 1250	Received By: 4	Date / Time: 11-16-18 1250
Relinquished By: 5	Date / Time:	Received By: 5	Date / Time:	Custody Seal #	<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact <input type="checkbox"/> Absent	Preserved where applicable <input type="checkbox"/>	Therm. ID: <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. °C

EHS-A-QAC-2024-00-FORM-Houston - Standard COC

<http://www.sgs.com/en/terms-and-conditions>

TD30690: Chain of Custody

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SGS

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TD30690

SGS

COOLER TEMP FORM

TC# TD30690

Delivered by (circle one):



ALGC Driver

Client

Date:

11-16-10

Client:

Cooler Number:

1

Thermometer ID:

289

CF °C

0

Corrected Temp, °C

14

SAMPLES CONTAINED IN COOLER

ORIGIN ID: MSCA (480) 275-8931
SHIP DATE: 15NOV18
ACT WGT: 45.00 LB
NET WGT: 19.95 LB
DIM: 30x16x15 IN
BILL RECIPIENT
ASHLEY LOOMIS
SGS TEMPE SERVICE CENTER
1421 W UNIVERSITY DR.
SUITE 100
TEMPE, AZ 85281
UNITED STATES US

0 SGS SAMPLE RECEIVING

10555 S SAM HOUSTON PKY W

HOUSTON TX 77071

REF HBA GHD

(713) 271-4700

DEPT

PO



FedEx
Express



SGS

Cus

Initials

FRI - 16 NOV HOLD

STANDARD OVERNIGHT

HLD

TRKW 7737 3990 2273

0207

FRI - 16 NOV HOLD

STANDARD OVERNIGHT

HLD

TRKW 7737 3990 2273

0207

77071

TXAS

IAH

AB SGRA



FTD 900956095 15NOV18 MSCA 85301/2807/NCBA

SGS Sample Receipt Summary

Page 1 of 3

Job Number: TD30690 **Client:** HALEY & ALDRICH **Project:** PLYMOUTH TUBE
Date / Time Received: _____ **Delivery Method:** _____ **Airbill #'s:** 773739902273
No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;
Cooler Temps (Initial/Adjusted): #1: (1.4/1.4);

Cooler Security		<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature		<u>Y or N</u>			
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
2. Cooler temp verification:	_____				
3. Cooler media:	Ice (Bag)				
Quality Control Preservation	<u>Y or N</u>		<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Sample Integrity - Documentation	<u>Y or N</u>		
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample Integrity - Condition	<u>Y or N</u>		
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	Intact		
Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>	
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

5.2
5

Sample Receipt Log

Page 2 of 3

Job #: TD30690

Date / Time Received: 11/16/2018 10:50:00 AM

Initials: ec

Client: HALEY & ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30690-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-3	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-4	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-4	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-4	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-4	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-4	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4

5.2
5

TD30690: Chain of Custody

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Sample Receipt Log

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Job #: TD30690 Date / Time Received: 11/16/2018 10:50:00 AM Initials: ec
 Client: HALEY & ALDRICH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TD30690-4	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-5	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-5	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-5	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-6	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4
1	TD30690-6	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR9	1.4	0	1.4

5.2
5

TD30690: Chain of Custody
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MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-MB	E0072343.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	0.66	1.0	0.39	ug/l	J
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	

Method Blank Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-MB	E0072343.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	Result	RL	MDL	Units	Q
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	97% 72-122%
17060-07-0	1,2-Dichloroethane-D4	94% 68-124%

Method Blank Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-MB	E0072343.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	99% 80-119%
460-00-4	4-Bromofluorobenzene	99% 72-126%

6.1.1
6

Method Blank Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-MB	Z71187.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	10	ug/l	
71-43-2	Benzene	ND	1.0	0.40	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.41	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.39	ug/l	
75-25-2	Bromoform	ND	1.0	0.36	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.42	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.38	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.39	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.39	ug/l	
75-00-3	Chloroethane	ND	1.0	0.35	ug/l	
67-66-3	Chloroform	ND	1.0	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.41	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.39	ug/l	
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.35	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.43	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.36	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.39	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.38	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.56	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.35	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.46	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.39	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.43	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.40	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.39	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.42	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.37	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.41	ug/l	
637-92-3	Ethyl tert-Butyl Ether	ND	1.0	0.37	ug/l	

Method Blank Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-MB	Z71187.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	Result	RL	MDL	Units	Q
591-78-6	2-Hexanone	ND	10	3.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.50	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.39	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.43	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	2.9	ug/l	
74-83-9	Methyl bromide	ND	1.0	0.30	ug/l	
74-87-3	Methyl chloride	ND	1.0	0.42	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.39	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.6	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/l	
91-20-3	Naphthalene	ND	5.0	1.6	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.42	ug/l	
100-42-5	Styrene	ND	1.0	0.40	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	15	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.36	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.33	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.48	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	1.0	0.45	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.46	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.37	ug/l	
108-88-3	Toluene	ND	1.0	0.42	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.41	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.36	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.39	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	95% 72-122%
17060-07-0	1,2-Dichloroethane-D4	94% 68-124%

Method Blank Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-MB	Z71187.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-1, TD30690-2

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	100% 80-119%
460-00-4	4-Bromofluorobenzene	100% 72-126%

Blank Spike Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-BS	E0072340.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	92.2	74	46-129
71-43-2	Benzene	25	22.0	88	68-119
108-86-1	Bromobenzene	25	22.9	92	71-119
74-97-5	Bromochloromethane	25	22.9	92	71-118
75-27-4	Bromodichloromethane	25	22.2	89	72-118
75-25-2	Bromoform	25	16.4	66	54-123
104-51-8	n-Butylbenzene	25	23.8	95	66-123
135-98-8	sec-Butylbenzene	25	25.0	100	72-123
98-06-6	tert-Butylbenzene	25	23.3	93	70-124
108-90-7	Chlorobenzene	25	22.4	90	74-120
75-00-3	Chloroethane	25	22.3	89	61-132
67-66-3	Chloroform	25	22.4	90	73-122
95-49-8	o-Chlorotoluene	25	22.9	92	71-122
106-43-4	p-Chlorotoluene	25	23.2	93	73-120
75-15-0	Carbon disulfide	25	25.7	103	55-140
56-23-5	Carbon tetrachloride	25	25.2	101	68-133
75-34-3	1,1-Dichloroethane	25	22.4	90	72-121
75-35-4	1,1-Dichloroethylene	25	27.3	109	67-140
563-58-6	1,1-Dichloropropene	25	23.0	92	73-130
96-12-8	1,2-Dibromo-3-chloropropane	25	19.4	78	47-133
106-93-4	1,2-Dibromoethane	25	22.7	91	69-121
107-06-2	1,2-Dichloroethane	25	20.6	82	68-121
78-87-5	1,2-Dichloropropane	25	22.9	92	72-116
142-28-9	1,3-Dichloropropane	25	21.5	86	70-118
594-20-7	2,2-Dichloropropane	25	24.8	99	57-141
124-48-1	Dibromochloromethane	25	20.6	82	68-119
75-71-8	Dichlorodifluoromethane	25	11.1	44	29-182
156-59-2	cis-1,2-Dichloroethylene	25	23.0	92	72-117
10061-01-5	cis-1,3-Dichloropropene	25	20.6	82	71-118
541-73-1	m-Dichlorobenzene	25	23.2	93	73-117
95-50-1	o-Dichlorobenzene	25	22.1	88	71-117
106-46-7	p-Dichlorobenzene	25	21.8	87	71-116
156-60-5	trans-1,2-Dichloroethylene	25	23.0	92	68-124
10061-02-6	trans-1,3-Dichloropropene	25	21.6	86	72-127
100-41-4	Ethylbenzene	25	23.8	95	71-117
637-92-3	Ethyl tert-Butyl Ether	25	17.9	72	66-122

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-BS	E0072340.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
591-78-6	2-Hexanone	125	112	90	49-124
87-68-3	Hexachlorobutadiene	25	24.8	99	62-143
98-82-8	Isopropylbenzene	25	26.1	104	74-141
99-87-6	p-Isopropyltoluene	25	24.4	98	72-126
108-10-1	4-Methyl-2-pentanone	125	106	85	54-122
74-83-9	Methyl bromide	25	19.4	78	53-138
74-87-3	Methyl chloride	25	14.5	58	50-145
74-95-3	Methylene bromide	25	21.6	86	71-117
75-09-2	Methylene chloride	25	20.9	84	60-125
78-93-3	Methyl ethyl ketone	125	106	85	51-129
1634-04-4	Methyl Tert Butyl Ether	25	18.9	76	65-119
91-20-3	Naphthalene	25	23.4	94	43-139
103-65-1	n-Propylbenzene	25	24.4	98	72-123
100-42-5	Styrene	25	24.3	97	74-119
75-65-0	Tert Butyl Alcohol	250	203	81	35-146
630-20-6	1,1,1,2-Tetrachloroethane	25	23.3	93	74-119
71-55-6	1,1,1-Trichloroethane	25	23.2	93	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	22.7	91	62-121
79-00-5	1,1,2-Trichloroethane	25	22.4	90	70-119
87-61-6	1,2,3-Trichlorobenzene	25	22.5	90	44-144
96-18-4	1,2,3-Trichloropropane	25	21.7	87	61-124
120-82-1	1,2,4-Trichlorobenzene	25	22.7	91	57-132
95-63-6	1,2,4-Trimethylbenzene	25	23.7	95	70-121
108-67-8	1,3,5-Trimethylbenzene	25	24.3	97	66-119
127-18-4	Tetrachloroethylene	25	24.5	98	72-132
108-88-3	Toluene	25	22.7	91	73-119
79-01-6	Trichloroethylene	25	23.7	95	73-121
75-69-4	Trichlorofluoromethane	25	23.9	96	46-152
75-01-4	Vinyl chloride	25	16.8	67	54-126
1330-20-7	Xylene (total)	75	71.5	95	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-122%
17060-07-0	1,2-Dichloroethane-D4	92%	68-124%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE3231-BS	E0072340.D	1	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	100%	80-119%
460-00-4	4-Bromofluorobenzene	99%	72-126%

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 3

Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-BS	Z71185.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	101	81	46-129
71-43-2	Benzene	25	23.4	94	68-119
108-86-1	Bromobenzene	25	23.6	94	71-119
74-97-5	Bromochloromethane	25	24.6	98	71-118
75-27-4	Bromodichloromethane	25	25.6	102	72-118
75-25-2	Bromoform	25	21.0	84	54-123
104-51-8	n-Butylbenzene	25	24.4	98	66-123
135-98-8	sec-Butylbenzene	25	24.9	100	72-123
98-06-6	tert-Butylbenzene	25	22.8	91	70-124
108-90-7	Chlorobenzene	25	23.7	95	74-120
75-00-3	Chloroethane	25	20.8	83	61-132
67-66-3	Chloroform	25	23.7	95	73-122
95-49-8	o-Chlorotoluene	25	23.6	94	71-122
106-43-4	p-Chlorotoluene	25	23.5	94	73-120
75-15-0	Carbon disulfide	25	24.3	97	55-140
56-23-5	Carbon tetrachloride	25	25.2	101	68-133
75-34-3	1,1-Dichloroethane	25	25.0	100	72-121
75-35-4	1,1-Dichloroethylene	25	25.3	101	67-140
563-58-6	1,1-Dichloropropene	25	24.7	99	73-130
96-12-8	1,2-Dibromo-3-chloropropane	25	21.5	86	47-133
106-93-4	1,2-Dibromoethane	25	24.2	97	69-121
107-06-2	1,2-Dichloroethane	25	22.0	88	68-121
78-87-5	1,2-Dichloropropane	25	24.6	98	72-116
142-28-9	1,3-Dichloropropane	25	22.6	90	70-118
594-20-7	2,2-Dichloropropane	25	25.0	100	57-141
124-48-1	Dibromochloromethane	25	22.6	90	68-119
75-71-8	Dichlorodifluoromethane	25	10.3	41	29-182
156-59-2	cis-1,2-Dichloroethylene	25	24.4	98	72-117
10061-01-5	cis-1,3-Dichloropropene	25	24.2	97	71-118
541-73-1	m-Dichlorobenzene	25	23.9	96	73-117
95-50-1	o-Dichlorobenzene	25	23.3	93	71-117
106-46-7	p-Dichlorobenzene	25	23.3	93	71-116
156-60-5	trans-1,2-Dichloroethylene	25	23.6	94	68-124
10061-02-6	trans-1,3-Dichloropropene	25	25.2	101	72-127
100-41-4	Ethylbenzene	25	24.4	98	71-117
637-92-3	Ethyl tert-Butyl Ether	25	22.3	89	66-122

* = Outside of Control Limits.

Blank Spike Summary

Page 2 of 3

Job Number: TD30690**Account:** HALDAZP Haley & Aldrich**Project:** Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-BS	Z71185.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:**Method:** SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
591-78-6	2-Hexanone	125	107	86	49-124
87-68-3	Hexachlorobutadiene	25	26.2	105	62-143
98-82-8	Isopropylbenzene	25	25.6	102	74-141
99-87-6	p-Isopropyltoluene	25	24.4	98	72-126
108-10-1	4-Methyl-2-pentanone	125	106	85	54-122
74-83-9	Methyl bromide	25	19.2	77	53-138
74-87-3	Methyl chloride	25	17.5	70	50-145
74-95-3	Methylene bromide	25	23.8	95	71-117
75-09-2	Methylene chloride	25	22.3	89	60-125
78-93-3	Methyl ethyl ketone	125	115	92	51-129
1634-04-4	Methyl Tert Butyl Ether	25	22.2	89	65-119
91-20-3	Naphthalene	25	24.8	99	43-139
103-65-1	n-Propylbenzene	25	24.3	97	72-123
100-42-5	Styrene	25	25.1	100	74-119
75-65-0	Tert Butyl Alcohol	250	194	78	35-146
630-20-6	1,1,1,2-Tetrachloroethane	25	25.6	102	74-119
71-55-6	1,1,1-Trichloroethane	25	25.2	101	72-129
79-34-5	1,1,2,2-Tetrachloroethane	25	23.2	93	62-121
79-00-5	1,1,2-Trichloroethane	25	23.7	95	70-119
87-61-6	1,2,3-Trichlorobenzene	25	25.1	100	44-144
96-18-4	1,2,3-Trichloropropane	25	21.8	87	61-124
120-82-1	1,2,4-Trichlorobenzene	25	24.3	97	57-132
95-63-6	1,2,4-Trimethylbenzene	25	23.6	94	70-121
108-67-8	1,3,5-Trimethylbenzene	25	24.2	97	66-119
127-18-4	Tetrachloroethylene	25	25.3	101	72-132
108-88-3	Toluene	25	23.8	95	73-119
79-01-6	Trichloroethylene	25	25.0	100	73-121
75-69-4	Trichlorofluoromethane	25	24.1	96	46-152
75-01-4	Vinyl chloride	25	18.5	74	54-126
1330-20-7	Xylene (total)	75	72.2	96	74-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	91%	68-124%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ6025-BS	Z71185.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-1, TD30690-2

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	99%	80-119%
460-00-4	4-Bromofluorobenzene	97%	72-126%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: TD30690

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30318-1MS	E0072352.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1MSD	E0072353.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1	E0072350.D	25	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	TD30318-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		3130	2630	84	3130	2460	79	7	46-129/25
71-43-2	Benzene	ND		625	567	91	625	557	89	2	68-119/12
108-86-1	Bromobenzene	ND		625	577	92	625	569	91	1	71-119/12
74-97-5	Bromochloromethane	ND		625	582	93	625	561	90	4	71-118/13
75-27-4	Bromodichloromethane	ND		625	545	87	625	539	86	1	72-118/16
75-25-2	Bromoform	ND		625	355	57	625	361	58	2	54-123/17
104-51-8	n-Butylbenzene	ND		625	616	99	625	606	97	2	66-123/14
135-98-8	sec-Butylbenzene	ND		625	642	103	625	632	101	2	72-123/13
98-06-6	tert-Butylbenzene	ND		625	604	97	625	590	94	2	70-124/15
108-90-7	Chlorobenzene	ND		625	573	92	625	567	91	1	74-120/12
75-00-3	Chloroethane	ND		625	545	87	625	536	86	2	61-132/16
67-66-3	Chloroform	ND		625	576	92	625	558	89	3	73-122/13
95-49-8	o-Chlorotoluene	ND		625	588	94	625	576	92	2	71-122/12
106-43-4	p-Chlorotoluene	ND		625	602	96	625	589	94	2	73-120/12
75-15-0	Carbon disulfide	ND		625	655	105	625	638	102	3	55-140/24
56-23-5	Carbon tetrachloride	ND		625	637	102	625	633	101	1	68-133/20
75-34-3	1,1-Dichloroethane	22.5	J	625	601	93	625	588	90	2	72-121/14
75-35-4	1,1-Dichloroethylene	1090		625	1930	134	625	1730	102	11	67-140/18
563-58-6	1,1-Dichloropropene	ND		625	606	97	625	591	95	3	73-130/15
96-12-8	1,2-Dibromo-3-chloropropane	ND		625	447	72	625	442	71	1	47-133/23
106-93-4	1,2-Dibromoethane	ND		625	572	92	625	559	89	2	69-121/13
107-06-2	1,2-Dichloroethane	ND		625	537	86	625	527	84	2	68-121/12
78-87-5	1,2-Dichloropropane	ND		625	584	93	625	573	92	2	72-116/12
142-28-9	1,3-Dichloropropane	ND		625	545	87	625	538	86	1	70-118/12
594-20-7	2,2-Dichloropropane	ND		625	643	103	625	618	99	4	57-141/16
124-48-1	Dibromochloromethane	ND		625	480	77	625	486	78	1	68-119/15
75-71-8	Dichlorodifluoromethane	ND		625	253	40	625	262	42	3	29-182/23
156-59-2	cis-1,2-Dichloroethylene	4060		625	4600	86	625	4430	59* a	4	72-117/13
10061-01-5	cis-1,3-Dichloropropene	ND		625	503	80	625	503	80	0	71-118/18
541-73-1	m-Dichlorobenzene	ND		625	593	95	625	583	93	2	73-117/12
95-50-1	o-Dichlorobenzene	ND		625	560	90	625	550	88	2	71-117/11
106-46-7	p-Dichlorobenzene	ND		625	563	90	625	550	88	2	71-116/11
156-60-5	trans-1,2-Dichloroethylene	36.8		625	639	96	625	620	93	3	68-124/15
10061-02-6	trans-1,3-Dichloropropene	ND		625	510	82	625	521	83	2	72-127/17
100-41-4	Ethylbenzene	ND		625	608	97	625	598	96	2	71-117/12
637-92-3	Ethyl tert-Butyl Ether	ND		625	459	73	625	453	72	1	66-122/12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: TD30690

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30318-1MS	E0072352.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1MSD	E0072353.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1	E0072350.D	25	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Compound	TD30318-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
591-78-6	2-Hexanone	ND		3130	2820	90	3130	2760	88	2	49-124/21
87-68-3	Hexachlorobutadiene	ND		625	613	98	625	601	96	2	62-143/18
98-82-8	Isopropylbenzene	ND		625	663	106	625	656	105	1	74-141/13
99-87-6	p-Isopropyltoluene	ND		625	635	102	625	623	100	2	72-126/13
108-10-1	4-Methyl-2-pentanone	ND		3130	2690	86	3130	2630	84	2	54-122/20
74-83-9	Methyl bromide	ND		625	470	75	625	463	74	2	53-138/16
74-87-3	Methyl chloride	11.6	J	625	311	48*	625	334	52	7	50-145/17
74-95-3	Methylene bromide	ND		625	551	88	625	534	85	3	71-117/12
75-09-2	Methylene chloride	232		625	782	88	625	741	81	5	60-125/16
78-93-3	Methyl ethyl ketone	ND		3130	2780	89	3130	2600	83	7	51-129/22
1634-04-4	Methyl Tert Butyl Ether	ND		625	496	79	625	491	79	1	65-119/13
91-20-3	Naphthalene	ND		625	548	88	625	552	88	1	43-139/28
103-65-1	n-Propylbenzene	ND		625	629	101	625	620	99	1	72-123/13
100-42-5	Styrene	ND		625	618	99	625	609	97	1	74-119/19
75-65-0	Tert Butyl Alcohol	ND		6250	5070	81	6250	5110	82	1	35-146/35
630-20-6	1,1,1,2-Tetrachloroethane	ND		625	590	94	625	583	93	1	74-119/14
71-55-6	1,1,1-Trichloroethane	ND		625	601	96	625	590	94	2	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	ND		625	586	94	625	571	91	3	62-121/17
79-00-5	1,1,2-Trichloroethane	ND		625	579	93	625	563	90	3	70-119/13
87-61-6	1,2,3-Trichlorobenzene	ND		625	541	87	625	531	85	2	44-144/27
96-18-4	1,2,3-Trichloropropane	ND		625	547	88	625	531	85	3	61-124/16
120-82-1	1,2,4-Trichlorobenzene	ND		625	550	88	625	550	88	0	57-132/18
95-63-6	1,2,4-Trimethylbenzene	ND		625	603	96	625	594	95	2	70-121/15
108-67-8	1,3,5-Trimethylbenzene	ND		625	622	100	625	612	98	2	66-119/15
127-18-4	Tetrachloroethylene	182		625	824	103	625	807	100	2	72-132/14
108-88-3	Toluene	ND		625	580	93	625	573	92	1	73-119/13
79-01-6	Trichloroethylene	2380		625	2990	98	625	2900	83	3	73-121/13
75-69-4	Trichlorofluoromethane	ND		625	598	96	625	608	97	2	46-152/25
75-01-4	Vinyl chloride	ND		625	390	62	625	398	64	2	54-126/17
1330-20-7	Xylene (total)	ND		1880	1830	98	1880	1810	97	1	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30318-1	Limits
1868-53-7	Dibromofluoromethane	98%	96%	99%	72-122%
17060-07-0	1,2-Dichloroethane-D4	94%	94%	96%	68-124%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30318-1MS	E0072352.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1MSD	E0072353.D	25	11/20/18	FT	n/a	n/a	VE3231
TD30318-1	E0072350.D	25	11/20/18	FT	n/a	n/a	VE3231

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-3, TD30690-4, TD30690-5, TD30690-6

CAS No.	Surrogate Recoveries	MS	MSD	TD30318-1	Limits
2037-26-5	Toluene-D8	100%	100%	100%	80-119%
460-00-4	4-Bromofluorobenzene	100%	100%	98%	72-126%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: TD30690

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30705-1MS	Z71192.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1MSD	Z71193.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1	Z71189.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	TD30705-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	125	89.2	71	125	84.6	68	5	46-129/25
71-43-2	Benzene	ND	25	20.4	82	25	19.9	80	2	68-119/12
108-86-1	Bromobenzene	ND	25	20.0	80	25	19.9	80	1	71-119/12
74-97-5	Bromochloromethane	ND	25	21.1	84	25	20.9	84	1	71-118/13
75-27-4	Bromodichloromethane	ND	25	21.8	87	25	21.6	86	1	72-118/16
75-25-2	Bromoform	ND	25	16.9	68	25	17.0	68	1	54-123/17
104-51-8	n-Butylbenzene	ND	25	21.4	86	25	20.6	82	4	66-123/14
135-98-8	sec-Butylbenzene	ND	25	21.8	87	25	21.0	84	4	72-123/13
98-06-6	tert-Butylbenzene	ND	25	19.9	80	25	19.2	77	4	70-124/15
108-90-7	Chlorobenzene	ND	25	20.9	84	25	20.0	80	4	74-120/12
75-00-3	Chloroethane	ND	25	15.6	62	25	16.2	65	4	61-132/16
67-66-3	Chloroform	ND	25	20.6	82	25	19.7	79	4	73-122/13
95-49-8	o-Chlorotoluene	ND	25	20.3	81	25	19.8	79	2	71-122/12
106-43-4	p-Chlorotoluene	ND	25	20.1	80	25	19.7	79	2	73-120/12
75-15-0	Carbon disulfide	ND	25	19.5	78	25	19.0	76	3	55-140/24
56-23-5	Carbon tetrachloride	ND	25	21.4	86	25	21.3	85	0	68-133/20
75-34-3	1,1-Dichloroethane	ND	25	21.5	86	25	20.7	83	4	72-121/14
75-35-4	1,1-Dichloroethylene	ND	25	21.7	87	25	20.6	82	5	67-140/18
563-58-6	1,1-Dichloropropene	ND	25	21.7	87	25	20.8	83	4	73-130/15
96-12-8	1,2-Dibromo-3-chloropropane	ND	25	18.0	72	25	17.6	70	2	47-133/23
106-93-4	1,2-Dibromoethane	ND	25	21.0	84	25	20.2	81	4	69-121/13
107-06-2	1,2-Dichloroethane	2.2	25	21.8	78	25	21.1	76	3	68-121/12
78-87-5	1,2-Dichloropropane	ND	25	21.4	86	25	21.0	84	2	72-116/12
142-28-9	1,3-Dichloropropane	ND	25	19.7	79	25	19.1	76	3	70-118/12
594-20-7	2,2-Dichloropropane	ND	25	20.1	80	25	19.4	78	4	57-141/16
124-48-1	Dibromochloromethane	ND	25	18.9	76	25	18.9	76	0	68-119/15
75-71-8	Dichlorodifluoromethane	ND	25	7.0	28*	25	7.1	28*	1	29-182/23
156-59-2	cis-1,2-Dichloroethylene	41.0	25	61.1	80	25	60.7	79	1	72-117/13
10061-01-5	cis-1,3-Dichloropropene	ND	25	20.4	82	25	20.4	82	0	71-118/18
541-73-1	m-Dichlorobenzene	ND	25	20.6	82	25	20.2	81	2	73-117/12
95-50-1	o-Dichlorobenzene	ND	25	20.1	80	25	19.8	79	2	71-117/11
106-46-7	p-Dichlorobenzene	ND	25	19.8	79	25	19.6	78	1	71-116/11
156-60-5	trans-1,2-Dichloroethylene	1.3	25	21.7	82	25	21.0	79	3	68-124/15
10061-02-6	trans-1,3-Dichloropropene	ND	25	20.8	83	25	20.3	81	2	72-127/17
100-41-4	Ethylbenzene	ND	25	21.5	86	25	20.5	82	5	71-117/12
637-92-3	Ethyl tert-Butyl Ether	ND	25	18.4	74	25	18.1	72	2	66-122/12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: TD30690

Account: HALDAZP Haley & Aldrich

Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30705-1MS	Z71192.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1MSD	Z71193.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1	Z71189.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples:

Method: SW846 8260C

TD30690-1, TD30690-2

CAS No.	Compound	TD30705-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
591-78-6	2-Hexanone	ND		125	94.9	76	125	90.3	72	5	49-124/21
87-68-3	Hexachlorobutadiene	0.95	J	25	23.1	89	25	23.0	88	0	62-143/18
98-82-8	Isopropylbenzene	ND		25	22.1	88	25	21.5	86	3	74-141/13
99-87-6	p-Isopropyltoluene	ND		25	21.2	85	25	20.6	82	3	72-126/13
108-10-1	4-Methyl-2-pentanone	ND		125	93.6	75	125	89.7	72	4	54-122/20
74-83-9	Methyl bromide	ND		25	14.9	60	25	15.3	61	3	53-138/16
74-87-3	Methyl chloride	ND		25	13.0	52	25	13.0	52	0	50-145/17
74-95-3	Methylene bromide	ND		25	20.4	82	25	20.5	82	0	71-117/12
75-09-2	Methylene chloride	ND		25	18.5	74	25	18.1	72	2	60-125/16
78-93-3	Methyl ethyl ketone	ND		125	101	81	125	95.7	77	5	51-129/22
1634-04-4	Methyl Tert Butyl Ether	ND		25	18.7	75	25	18.4	74	2	65-119/13
91-20-3	Naphthalene	ND		25	17.2	69	25	18.8	75	9	43-139/28
103-65-1	n-Propylbenzene	ND		25	21.1	84	25	20.4	82	3	72-123/13
100-42-5	Styrene	ND		25	22.0	88	25	20.9	84	5	74-119/19
75-65-0	Tert Butyl Alcohol	ND		250	137	55	250	135	54	1	35-146/35
630-20-6	1,1,1,2-Tetrachloroethane	ND		25	22.1	88	25	21.2	85	4	74-119/14
71-55-6	1,1,1-Trichloroethane	ND		25	21.7	87	25	20.8	83	4	72-129/14
79-34-5	1,1,2,2-Tetrachloroethane	0.47	J	25	20.0	78	25	19.9	78	1	62-121/17
79-00-5	1,1,2-Trichloroethane	ND		25	20.8	83	25	20.1	80	3	70-119/13
87-61-6	1,2,3-Trichlorobenzene	ND		25	17.4	70	25	19.4	78	11	44-144/27
96-18-4	1,2,3-Trichloropropane	ND		25	19.1	76	25	18.7	75	2	61-124/16
120-82-1	1,2,4-Trichlorobenzene	ND		25	19.7	79	25	19.8	79	1	57-132/18
95-63-6	1,2,4-Trimethylbenzene	ND		25	20.4	82	25	19.9	80	2	70-121/15
108-67-8	1,3,5-Trimethylbenzene	ND		25	20.6	82	25	20.3	81	1	66-119/15
127-18-4	Tetrachloroethylene	22.6		25	36.9	57*	25	36.1	54*	2	72-132/14
108-88-3	Toluene	ND		25	20.8	83	25	19.8	79	5	73-119/13
79-01-6	Trichloroethylene	9.6		25	30.1	82	25	29.3	79	3	73-121/13
75-69-4	Trichlorofluoromethane	ND		25	18.9	76	25	19.6	78	4	46-152/25
75-01-4	Vinyl chloride	1.9		25	15.8	56	25	16.4	58	4	54-126/17
1330-20-7	Xylene (total)	ND		75	63.4	85	75	60.5	81	5	74-119/13

CAS No.	Surrogate Recoveries	MS	MSD	TD30705-1	Limits
1868-53-7	Dibromofluoromethane	99%	98%	96%	72-122%
17060-07-0	1,2-Dichloroethane-D4	92%	91%	94%	68-124%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30690
Account: HALDAZP Haley & Aldrich
Project: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30705-1MS	Z71192.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1MSD	Z71193.D	1	11/21/18	FT	n/a	n/a	VZ6025
TD30705-1	Z71189.D	1	11/21/18	FT	n/a	n/a	VZ6025

The QC reported here applies to the following samples: Method: SW846 8260C
TD30690-1, TD30690-2

CAS No.	Surrogate Recoveries	MS	MSD	TD30705-1	Limits
2037-26-5	Toluene-D8	100%	98%	101%	80-119%
460-00-4	4-Bromofluorobenzene	97%	97%	99%	72-126%

* = Outside of Control Limits.

Misc. Forms

Custody Documents and Other Forms

(SGS Orlando, FL)

Includes the following where applicable:

- Chain of Custody

10165 Harwin Drive, Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.sgs.com

[illegible]

TD30690: Chain of Custody

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SGS Orlando, FL

SGS Sample Receipt Summary

Job Number: TD30690

Client: SGS TX

Project: PLYMOUTH TUBE

Date / Time Received: 11/20/2018 9:00:00 AM

Delivery Method: FX

Airbill #s:

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Temp criteria achieved | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Cooler temp verification | <u>IR Gun</u> | |
| 5. Cooler media | <u>Ice (Bag)</u> | |

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

W or S N/A

- | | | | |
|------------------------|-------------------------------------|--------------------------|--------------------------|
| 3. Type Of TB Received | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|------------------------|-------------------------------------|--------------------------|--------------------------|

Sample Information

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Samples preserved properly | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Sufficient volume/containers recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Condition of sample | <u>Intact</u> | | |
| 5. Sample recvd within HT | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 6. Dates/Times/IDs on COC match Sample Label | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 7. VOCs have headspace | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 9. Compositing instructions clear | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Voa Soil Kits/Jars received past 48hrs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. % Solids Jar received? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Residual Chlorine Present? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 _____ 230315 _____

pH 10-12 _____ 219813A _____

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH

Date: 11/20/2018 9:00:00 A

Reviewer: _____

Date: _____

TD30690: Chain of Custody

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MS Volatiles

QC Data Summaries

(SGS Orlando, FL)

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: TD30690
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2060-MB	Z54620.D	1	11/21/18	MM	n/a	n/a	VZ2060

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM
TD30690-1, TD30690-2, TD30690-3, TD30690-4

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	97% 74-125%
2037-26-5	Toluene-D8	98% 88-111%

Blank Spike Summary

Job Number: TD30690
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2060-BS	Z54618.D	1	11/21/18	MM	n/a	n/a	VZ2060

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30690-1, TD30690-2, TD30690-3, TD30690-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	20.1	101	65-121

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	101%	74-125%
2037-26-5	Toluene-D8	100%	88-111%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: TD30690
Account: ALGC SGS Houston, TX
Project: HALDAZP: Plymouth Tube Groundwater Monitoring - 128159-003

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TD30690-1MS	Z54631.D	5	11/21/18	MM	n/a	n/a	VZ2060
TD30690-1MSD	Z54632.D	5	11/21/18	MM	n/a	n/a	VZ2060
TD30690-1	Z54621.D	1	11/21/18	MM	n/a	n/a	VZ2060

The QC reported here applies to the following samples: Method: SW846 8260B BY SIM

TD30690-1, TD30690-2, TD30690-3, TD30690-4

CAS No.	Compound	TD30690-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	ND	100	101	101	100	105	105	4	65-121/27

CAS No.	Surrogate Recoveries	MS	MSD	TD30690-1	Limits
17060-07-0	1,2-Dichloroethane-D4	100%	100%	100%	74-125%
2037-26-5	Toluene-D8	100%	100%	96%	88-111%

* = Outside of Control Limits.

APPENDIX C

Data Quality Review

Data Usability Summary Report

Project Name: Plymouth Tube Groundwater Monitoring

Analytical Laboratory: SGS North America, Inc. – Houston, TX

Validation Performed by: Elysse Hernandez

Validation Reviewed by: Katherine Miller

Validation Date: December 2018

Haley & Aldrich, Inc., prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the Plymouth Tube 4th Quarter groundwater samples collected on 14-16 November 2018. The analytical results for Sample Delivery Group(s) (SDG) listed below were reviewed to determine the data's usability. This data validation and usability assessment was performed per the guidance and requirements established by the U.S. Environmental Protection Agency's (EPA) "National Functional Guidelines for Organic Data Review". The following quality assurance/quality control criteria from the analysis of the project samples were reviewed as applicable:

1. Sample Delivery Group Number TD30551
 2. Sample Delivery Group Number TD30631
 3. Sample Delivery Group Number TD30690
- Holding Times/Preservation
 - Reporting Limits and Sample Dilution
 - Blank Sample Analysis
 - Surrogate Recovery Compliance
 - Laboratory Control Samples
 - Matrix Spike Samples
 - Laboratory and Field Duplicate Sample Analysis
 - System Performance and Overall Assessment

Analytical precision and accuracy were evaluated based on the laboratory control or matrix spike analyses performed concurrently with the project samples or based on field duplicates collected at the site.

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and RL are flagged "J" estimated.

Sample data were qualified in accordance with laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives for the project and usable; any exceptions are noted in the following pages.

1. Sample Delivery Group Number TD30551

1.1 SUMMARY

This DUSR summarizes the review of SDG number TD30551. Samples were collected, preserved, and shipped following standard chain of custody protocol. Samples were also received appropriately, identified correctly, and analyzed according to the monitoring schedule. Chains of custody were appropriately signed and dated by the field and/or laboratory personnel with the following exceptions:

- A revised report was issued on 11/21/18 for the following: The sample ID for LB-2D-120-111318 (TD30551-2) was updated to PT-2D-120-111318. A revised report was issued.

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Collection Date	Matrix	Methods	Holding Time
PT-1D-120-111318	N	TD30551-1	11/13/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
LB-2D-120-111318	N	TD30551-2	11/13/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-5-90-111318	N	TD30551-3	11/13/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-4D-126-111318	N	TD30551-4	11/13/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-4-90-111318	N	TD30551-5	11/13/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
ERB-111318	EB	TD30551-6	11/13/2018	WQ	VOCs by EPA 8260C	14 days
TRIP BLANK-111318	TB	TD30551-7	11/13/2018	WQ	VOCs by EPA 8260C	14 days

1.2 CASE NARRATIVE

The SGS lab report case narrative lists various quality control exceedances not covered in a standard Level II review. As a full Level IV validation was not requested, these quality control exceedances were not reviewed and thus no qualifiers were applied.

- Various analytes recovered outside of limits for EPA 8260C continuing calibration verification (CCV).

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

Cooler temperature on arrival to the laboratory was: 1.4 and 3.4 Degrees C.

1.4 REPORTING LIMITS AND SAMPLE DILUTION

No dilutions were performed on data in this report.

1.5 BLANK SAMPLE ANALYSIS

Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport. Blank samples for field quality control had no detections, indicating that no contamination from field activities occurred.

1.6 SURROGATE RECOVERY COMPLIANCE

Surrogates, also known as deuterated monitoring compounds, are compounds added to each sample prior to sample preparation to evaluate the percent recovery (%R) to ensure that the organic analytical method is efficient. The %R were within the specified limits.

1.7 LABORATORY CONTROL SAMPLES

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. Compounds associated with the LCS within the specified limits with the following exceptions:

- A LCSD was not reported for this analysis batch. As a site-specific field duplicate was analyzed, this data set is supported by precision quality control.

1.8 MATRIX SPIKE SAMPLES

Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effect of the sample matrix on the sample preparation procedures and measurement methodologies. The sample(s) below were used for MS/MSD:

Lab Sample Number	Matrix Spike/ Matrix Spike Duplicate Sample Client ID	Method(s)
TD30551-1	PT-1D-120-111318	1,4-Dioxane by 8260B SIM

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits with the following exceptions:

Sample Type	Method	Parent Sample ID	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD (VE3228)	8260C	TD30363-5	Methyl Tert Butyl Ether	--	None, not HA Sample	None

1.9 LABORATORY AND FIELD DUPLICATE SAMPLES

The laboratory duplicate sample analysis is used by the laboratory at the time of analysis to demonstrate acceptable method precision. The laboratory did not analyze any laboratory duplicates in this SDG

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. No field duplicates were collected in this data set.

1.10 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by analytical method. Based on the review of this report, the data are 100% useable. No qualifiers were applied to any data in this report.

2. Sample Delivery Group Number TD30631

2.1 SUMMARY

This DUSR summarizes the review of SDG number TD30631. Samples were collected, preserved, and shipped following standard chain of custody protocol. Samples were also received appropriately, identified correctly, and analyzed according to the monitoring schedule. Chains of custody were appropriately signed and dated by the field and/or laboratory personnel with the following exceptions:

- A revised report was issued on 11/27/18 due to missing TCE results for PT-3 and 2,2-dichloropropane results for PT-2S

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Collection Date	Matrix	Methods	Holding Time
PT-3D-126-111418	N	TD30631-1	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-3-90-111418	N	TD30631-2	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-1S-90-111418	N	TD30631-3	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-2S-90-111418	N	TD30631-4	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
LB-7R-90-111418	N	TD30631-5	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
PT-1S-90-111418 DUP	FD	TD30631-6	11/14/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
ERB-111418	EB	TD30631-7	11/14/2018	WQ	VOCs by EPA 8260C	14 days
TRIP BLANK-111418	TB	TD30631-8	11/14/2018	WQ	VOCs by EPA 8260C	14 days

2.2 CASE NARRATIVE

The SGS lab report case narrative lists various quality control exceedances not covered in a standard Level II review. As a full Level IV validation was not requested, these quality control exceedances were not reviewed and thus no qualifiers were applied.

- Various analytes recovered outside of limits for EPA 8260C continuing calibration verification (CCV).

2.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

Cooler temperature on arrival to the laboratory was: 1.1 and 1.8 Degrees C.

2.4 REPORTING LIMITS AND SAMPLE DILUTION

All dilutions were reviewed and found to be justified. Any non-detects with elevated reported limits are noted and explained below.

Sample ID	Lab ID	Analyte/ Method	Dilution Factor	Issue/Explanation
PT-2S-90-111418	TD30631-4	Trichloroethene	5x	Sample diluted due to high concentration of target analyte
PT-3-90-111418	TD30631-2		2x	

2.5 BLANK SAMPLE ANALYSIS

Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport. Blank samples for field quality control had no detections, indicating that no contamination from field activities occurred.

2.6 SURROGATE RECOVERY COMPLIANCE

Surrogates, also known as deuterated monitoring compounds, are compounds added to each sample prior to sample preparation to evaluate the percent recovery (%R) to ensure that the organic analytical method is efficient. The %R were within the specified limits.

2.7 LABORATORY CONTROL SAMPLES

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. Compounds associated with the LCS within the specified limits with the following exceptions:

- A LCSD was not reported for this analysis batch. As a site-specific field duplicate was analyzed, this data set is supported by precision quality control.

2.8 MATRIX SPIKE SAMPLES

Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effect of the sample matrix on the sample preparation procedures and measurement methodologies. No client samples were used for MS/MSD analysis in this SDG.

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits with the following exceptions:

Sample Type	Method	Parent Sample ID	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD (VR1923)	8260C	TD30451-2	Various VOCs	--	None, not HA Sample	None

2.9 LABORATORY AND FIELD DUPLICATE SAMPLES

The laboratory duplicate sample analysis is used by the laboratory at the time of analysis to demonstrate acceptable method precision. The laboratory did not analyze any laboratory duplicates in this SDG

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The RPD comparison for any field duplicates in this SDG is shown below. RPDs were all below 35% for water (or the absolute difference rule was satisfied if detects were less than 5x the RL). Any exceptions are noted below and qualified.

Field Duplicate RPD Calculations:

Analyte (ug/L)	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
	PT-1S-90-111418	PT-1S-90-111418 DUP		
Trichloroethene	1.3	1.5	14.3	None, Abs Diff < RL
1,4-Dioxane	1.2	0.33	113.7	None, Abs Diff < RL
All other compounds	ND	ND	NA	None, both ND for analytes

2.10 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by analytical method. Based on the review of this report, the data are 100% useable. No qualifiers were applied to any data in this report.

3. Sample Delivery Group Number TD30690

3.1 SUMMARY

This DUSR summarizes the review of SDG number TD30690. Samples were collected, preserved, and shipped following standard chain of custody protocol. Samples were also received appropriately, identified correctly, and analyzed according to the monitoring schedule. Chains of custody were appropriately signed and dated by the field and/or laboratory personnel.

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Collection Date	Matrix	Methods	Holding Time
PT-6D-165-111518	N	TD30690-1	11/15/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
LB-13-124-111518	N	TD30690-2	11/15/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
LB-17-138-111518	N	TD30690-3	11/15/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
LB-1-88-111518	N	TD30690-4	11/15/2018	GW	VOCs by EPA 8260C; 1,4-Dioxane by EPA 8260B SIM	14 days
ERB-111518	EB	TD30690-5	11/15/2018	WQ	VOCs by EPA 8260C	14 days
TRIP BLANK-111518	TB	TD30690-6	11/15/2018	WQ	VOCs by EPA 8260C	14 days

3.2 CASE NARRATIVE

The SGS lab report case narrative lists various quality control exceedances not covered in a standard Level II review. As a full Level IV validation was not requested, these quality control exceedances were not reviewed and thus no qualifiers were applied.

- Various analytes recovered outside of limits for EPA 8260C continuing calibration verification (CCV).

3.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

Cooler temperature on arrival to the laboratory was: 1.4 and 3.8 Degrees C.

3.4 REPORTING LIMITS AND SAMPLE DILUTION

No dilutions were performed on data in this report.

3.5 BLANK SAMPLE ANALYSIS

Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the following exceptions:

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (ug/L)	Qualifier	Affected Samples
Method Blank	VE3231	Chloroform	0.66 J	None, samples ND for analyte	None

Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport. Blank samples for field quality control had no detections, indicating that no contamination from field activities occurred.

3.6 SURROGATE RECOVERY COMPLIANCE

Surrogates, also known as deuterated monitoring compounds, are compounds added to each sample prior to sample preparation to evaluate the percent recovery (%R) to ensure that the organic analytical method is efficient. The %R were within the specified limits.

3.7 LABORATORY CONTROL SAMPLES

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. Compounds associated with the LCS within the specified limits with the following exceptions:

- A LCSD was not reported for this analysis batch. As a site-specific field duplicate was analyzed, this data set is supported by precision quality control.

3.8 MATRIX SPIKE SAMPLES

Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effect of the sample matrix on the sample preparation procedures and measurement methodologies. The sample(s) below were used for MS/MSD:

Lab Sample Number	Matrix Spike/ Matrix Spike Duplicate Sample Client ID	Method(s)
TD30690-1	PT-6D-165-111518	8260B SIM

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits with the following exceptions:

Sample Type	Method	Parent Sample ID	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD (VE3231)	8260C	TD30318-1	Various VOCs	--	None, not HA Sample	None
MS/MSD (VZ6025)	8260C	TD30705-1	Various VOCs	--	None, not HA Sample	None

3.9 LABORATORY AND FIELD DUPLICATE SAMPLES

The laboratory duplicate sample analysis is used by the laboratory at the time of analysis to demonstrate acceptable method precision. The laboratory did not analyze any laboratory duplicates in this SDG.

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. No field duplicates were collected in this data set.

3.10 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by analytical method. Based on the review of this report, the data are 100% useable. No qualifiers were applied to any data in this report.

References

1. United States Environmental Protection Agency, 2017b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-2017-002. January.

Glossary

- Sample Types:
 - N Primary Sample
 - FD Field Duplicate Sample
 - EB Equipment Blank Sample
 - TB Trip Blank Sample
- Units:
 - mg/kg milligram per kilogram
 - mg/L milligram per liter
- Matrices:
 - SO Soil
 - WQ Water Quality
- Table Footnotes
 - NA Not applicable
 - ND Non-detect

Results are qualified with the following codes in accordance with EPA National Functional Guidelines:

- Concentration (C) Qualifiers:
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers:
 - E The compound was quantitated above the calibration range.
 - D The concentration is based on a diluted sample analysis.
- Validation Qualifiers:
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit; however, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is therefore an estimated concentration only.
 - R The sample results were rejected as unusable; the compound may or may not be present in the sample.